The Plough, the Loom, and the Anvil.

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THE TARIFF OF 1846,

CONSIDERED IN REGARD TO ITS EFFECTS UPON THE PLANTERS AND FARMERS OF THE UNION.

IN our last we gave our readers a review of THE PAST, showing the effect produced upon the farming and planting interests by the tariff of 1842, during the few years that it was permitted to remain in operation. In doing so, we took the facts precisely as furnished from the immediate vicinity of the Treasury, while its chair was still occupied by the author of the tariff of 1846, in an article endorsed by the official paper as containing "a masterly view of the question." By aid of the facts thus given, we were enabled to show that in the five years following the passage of the law of 1842, the power to consume iron grew from 400,000 tons in that year, to 800,000 in 1847, and that thus the farmer and planter had obtained a market for their products equal to the price of 400,000 tons, or about 30 millions of dollars, leaving out of view the further market furnished by the men employed in building furnaces and mills, and machine shops, and the numerous houses required for the persons who worked in them. It was also shown that the power to consume cloth had increased so rapidly that the cotton manufacture had grown from 300,000 to 600,000 bales, giving to the planter that immense market for his products, and to the farmer the market afforded by the men, and women, and children, employed in the work of converting the cotton into cloth, and the thousands and tens of thousands of men employed in building mills, and houses for workmen, and constructing machinery for the mills, then constantly increasing in number. Again, it was shown that the woollen manufacture had grown in those years from 21 to 40 millions of dollars, affording to the farmer an additional market for wool and food, to the extent of almost all this immense difference. Further, it was shown that the power to consume coal had grown so rapidly, that whereas the whole demand upon the anthracite region of Pennsylvania, in 1842, but little exceeded a million of tons, it had risen in 1847 to three millions, affording to the farmer and planter an increased market for food, and wool, and timber, and others of the productions of the earth, to the extent of the price of two millions of tons, worth at market at least eight millions of dollars. The *additional* market thus provided for the farmer and planter in that short period, was shown to have been *one hundred millions of dollars a year*, and probably far more, and this was done by aid of the facts supplied by our opponent, who insisted that to carry into effect the doctrine that the plough, the loom, and the anvil should be brought to combine their efforts, would be to "annihilate all commerce, and, as a necessary consequence, all civilization," he having overlooked the fact that the highest evidence of advancing civilization is to be found in an increase of the power to consume cloth and iron. He belongs to that school of political economists which has great faith in the beneficial influence of ships and wagons, which produce nothing, and but little in that of looms and anvils, which produce much that is needed for the civilization of man.

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We propose now to examine THE PRESENT, by aid of facts, the correctness of which we think must be admitted as unhesitatingly as we have done by those presented by our opponents. In doing so, we desire to have special reference to the following passage from the recent Report of the late Secretary of the Treasury, in which is to be found the whole essence of that most elaborate document:

"The adoption by each nation of a high tariff is a war upon the labour of the world. As labour is more productive, capital is more rapidly increased and wages augmented. Yet the tariff, by compelling each nation to employ a portion of its industry in articles which can be produced more cheaply abroad, and refusing the exchange, forces labour throughout the world into less profitable pursuits, and, as a consequence, diminishes the products of labour as well as its wages. Thus, if silks can be manufactured at a less cost in Europe, and breadstuffs more cheaply in this country, and by high tariffs we prevent the import of silks here, while by similar tariffs abroad, or their inability to purchase from us because we will not take their fabrics in exchange, our breadstuffs are excluded to a greater or less extent from their markets and their silks from our own, labour is forced in both countries into less productive pursuits, and both parties have sustained a loss. International tariffs diminish the aggregate value of the profits of labour to the extent of hundreds of millions of dollars every year, and reduce correspondingly the wages of labour."

That the general theory of the advantage to be derived from perfect freedom of trade is true, there can be no doubt; but the question to be here decided is, whether or not, *in the existing state of the world*, perfect freedom is the system under which *we* should prosper most? There may exist disturbing causes, rendering impossible in the body politic the adoption of that which otherwise would be the true policy, as in the physical body there frequently exist disturbances which render it necessary to substitute salts and magnesia for beef and mutton. To determine whether or not such causes do exist, it is necessary to study the phenomena presented by an examination of the movements of our own community, and ascertain by the working of the two systems we have tried, which is the one—adequate protection, or that merely incidental protection which results from the collection of revenue, and approaches to freedom of trade—that has most tended to produce prosperity.

The Secretary says that protection is "a war upon the labour of the world," that it "diminishes the aggregate value of the profits of labour to the extent of hundreds of millions of dollars every year, and reduces correspondingly the wages of labour."

Here is the theory. If *true*, the practical results must prove it so. If they do not prove it, it cannot be true, for no theory can be true that is in opposition to facts whose accuracy cannot be disputed. If *true*, wages must have fallen from 1843 to 1847, and the power to consume food and cloth, and fuel and iron, and other of the necessaries or conveniences of life, must have *diminished*, while a corresponding rise in wages and *increase* in the power of consumption must have been experienced in the past year, and must be now experienced. If *untrue*, wages and the power of consumption must have *risen* between 1843 and 1847, and they must have *fallen* in the period that has since elapsed.

The growth of population in the former period was probably not more than *fifteen* per cent., yet the power to consume domestic cloth and iron increased *one hundred* per cent., while the consumption of domestic fuel trebled itself, and yet the power to consume foreign commodities rose from year to year, and had attained as high a point as in any continuous period during the last twenty years. To save the reader the trouble of reference, we give the figures of the last eighteen years:

Years.	Population.	Total consumption.	Per Head.
1830	12,856,165	$49,575,000	$3 87
1831	13,277,415	82,808,000	4 23
1832	13,698,665	75,327,000	5 50
1833	14,119,915	83,470,000	5 92
1834	14,541,165	86,973,000	6 00
1835	14,962,415	122,007,000	8 20
1836	15,383,665	158,811,000	10 40
1837	15,804,915	113,310,000	7 00
1838	16,226,165	86,552,000	5 40
1839	16,647,415	145,870,000	8 70
1840	17,068,666	86,250,000	5 00
1841	17,560,082	114,776,000	6 50
1842	18,051,499	87,996,000	4 90
1843	18,542.915	*37,293,000	†2 60
1844	19,034,332	96,390,000	5 00
1845	19,525,749	105,599,000	5 40
1846	20,017,165	110,048,000	5 50
1847	20,508,582	116,258,000	5 70

It is here obvious that protection did not diminish the value of labour in either domestic or foreign commodities, for the consumption of each and every one increased with a rapidity unparalleled in any nation of the world; and there was every reason to believe that it would go on with accelerated force. Throughout the country men were everywhere experiencing the benefits resulting from the diversification of employments. The farmer sold to the miner the timber that had heretofore encumbered his best lands, and his spare labour, and that of his wagons and horses, paying thereby for all the cloth and iron he could consume, leaving him a large balance to be applied to improving his farm, and thus increasing the product of his labour, with further increase in his power to consume cloth and iron. The daughter earned wages in the factory, and was thereby enabled to clothe herself, and to provide furniture for her future home. Everywhere men, women, children, wagons, and horses, were fully employed, and *the power of consumption grew with the power of production*. Such has been the case in every country of the world, and if we desire to measure the extent of the one, we have but to ascertain that of the other. Consumption grew with unexampled rapidity from 1843 to 1847, indicating a vast increase in production. How has it been in the last two years? How is it now?

In that time the growth of population has been more rapid than in any previous period, and it is safe to assume that it now exceeds that of the corresponding period in 1847, by at least eight per cent., or above a million and a half of people. At the same rate of increase that had been exhibited in the four previous years, the power to consume cotton would have risen to 900,000 bales, coal to five millions of tons, iron to 1,200,000 tons, and woollen cloths to more than fifty millions of dollars.

It is not necessary to our purpose to insist that such would have been the increase, although there is every reason to believe that such it would have been, and that it would, we ourselves entertain little doubt. When men are prosperous, the power to accumulate capital is great, and the power of production and consumption increases in a constantly accelerated ratio. It was, however, discovered that protection was "a war upon the labour of

* Nine months, September 30 to June 30.

† The consumption in nine months was at the rate of $2 per head, equal to $2·67 for the year.

the world," and that the power of the labourer to consume coal, and cloth, and iron, would be increased by a change of system, and the tariff of 1846 was substituted for that of 1842. What have been the results, we propose now to show.

The consumption of coal, which had risen in 1847 to three millions of tons, became stationary in 1848. Coal operators were ruined, and coal miners were deprived of employment. Mines ceased to be opened, and railroads ceased to be made. Labourers, first compelled to be satisfied with reduced wages, were next driven to seek the West, there to raise food, and thus to become rivals to the farmer, when they would have preferred to remain at the East, consumers of food and customers to the farmer.

In the present year, the quantity sent to market has been greatly reduced. Prices were so low that the operators could not pay wages out of the proceeds of the coal, and the consequence has been that thousands of men have been deprived of employment and rendered unable to purchase food or clothing. The consumption of this most important article has diminished, and is likely still further to diminish, and it is now doubtful if it will attain the same height as in 1847, whereas had the tariff of 1842 remained undisturbed, the consumption of this year would have reached four and a half millions. Here we have a loss to the farmer and planter of a market for six millions of dollars' worth of food and clothing, for all the labour represents these commodities, and the rents and tolls would have gone to further improvements, giving employment to labourers who have sought the West, there to become rivals to the farmer, and thus increase our surplus of food.

It may be said that the difference is made up in the consumption of foreign coal, also representing food. How far this is true may be judged from the following comparative statement of the import of coal into Boston for nine months of the two past years:

September 1 to June 1.	1847–48.	1848–49.
Virginia Coal, bushels	50,225 . .	9,400
Anthracite, tons	153,753 . .	124,900
Foreign, "	27,285 . .	19,823

The power to consume foreign coal has thus diminished, although the domestic production has so greatly fallen off.

In 1847, the product of pig-iron had reached 800,000 tons. That of bar iron had greatly increased, and the manufacture of railroad iron, which in 1843 had no existence, had already attained the large amount of above 100,000 tons. In 1848, rolling mills were stopped, and their owners were ruined. In 1849, the owners of furnaces are likely to share the same fate. Pig-iron, which a few weeks since was at $25, is now at $19, and may fall to $15, closing every furnace in the country. The power to consume iron is now less than it was in 1847, although the population has so largely increased, and if the price of iron abroad should fall still further, that power must be still further diminished, for we do not possess the means to pay for the iron that would require to be imported should our furnaces and mills be stopped. Had the tariff of 1842 remained unchanged, the product of this year would have been greater than that of 1847 by at least 200,000 tons, worth, in the various forms in which it is used, not less than fifteen millions of dollars, all of which would have represented food and clothing consumed, and houses occupied by the labourers who would thus have furnished to the farmer a market for that immense quantity of his products.

In no part of the world was the manufacture of iron making so rapid a growth as here, and in none was there so great an improvement in the mode of production. By improved processes, the yield of furnaces had almost doubled, and there was every reason to believe that a few years

would place that great interest beyond the reach of destruction from the unceasing changes of policy, and consequent vibrations in price, so constantly occurring in the system of Great Britain. Now, however, all goes backward. Rolling-mills and furnaces are closed and being closed, and such of the owners as have thus far escaped ruin are in a fair way to be ruined.

The manufacture of cotton cloth has also been stationary. North of Mason and Dixon's line, scarcely any factories have been commenced in the last eighteen months. Many of those already existing have worked short time within the last twelve months, and all have worked without profit. The owners of print works have been ruined, and no sane man would now invest his capital in such property. At the South and West some few mills have been started, and others are about to be so; but the increase there will not more than compensate for the decrease at the North. The product of 1849 will not exceed, even if it equals, that of 1847, whereas, had the tariff of 1842 remained unchanged, it would have increased to the extent of at least 200,000 bales. The planter has lost the market for his cotton, and the farmer for the food that would have been consumed by the vast numbers of persons engaged in quarrying stone, getting out timber, and fashioning both into houses and mills; and those other vast numbers that would have been engaged in making machinery, and using it in the conversion of the cotton into cloth, dying the cloth, and converting it into clothing.

So too with woollen cloth. The consumption doubled under the tariff of 1842, but it has become stationary under that of 1846.

The consumption of paper has diminished, and paper-mills are no longer built. The consumption of books has diminished, and printing-offices are being diminished in size. And so is it in every department of industry.

The consumption of lumber has greatly diminished. The quantity sent to market in the past season is far short of what it has been for several years past, and yet the tendency is to a constant reduction of prices, showing a diminished power to produce houses, mills, or roads, whose production would find employment for tens of thousands of those who now remain here idle, or of those who have already sought the West, there to become producers of food.

Let those who oppose the policy of protection examine for themselves, and they will see that the consumption of fuel, of cloth, and of iron, and of every other commodity required for the maintenance and comfort of man, has become stationary, even if it has not retrograded, notwithstanding the very large increase of our population in the past two years, and that there is reason to believe that it is not only less *per head* than it was two years since, but that it is actually less in *quantity*, and therefore *greatly less* per head. Having done this, let them determine which is the real "war upon the labour of the world," the system of 1842 or that of 1846.

Every diminution in the power to consume fuel, or iron, or cloth, and every diminution in the demand for stone and lumber for the construction of factories, and furnaces, and houses, affects the producer of food and cotton, for all these things represent only the food and the materials for clothing consumed by those engaged in producing them. This, however, is not the only manner in which the producer is affected. Those who are driven from the conversion of food and ore into iron, and food and wool into cloth, and food and iron into machinery, and food and clothing into furnaces, and mills, and houses, must apply themselves to the production of food or wool, and thus increase the competition in market among the sellers of those commodities, while diminishing the competition for the purchase of them, the necessary consequence of which must be the ruin of both farmer and planter, and the reduction of the wages of all engaged in the cultivation of the soil. In the last two years at

least 150,000 persons have been driven to the West, who would gladly have remained in the East, while those who have remained have been working at diminished wages, and tens of thousands have been idle, the necessary consequence of which has been a diminution in the power to consume food, which is therefore everywhere superabundant. From day to day, prices fall, and yet we have not even begun to feel the effects of the system which has converted so many consumers into producers. The foreign market has totally failed to answer the fond expectations of the late Secretary. The great railroad speculation of England, which produced so great a demand for food, cannot be revived. The potato-rot may not occur again. The wars, and revolutions, and blockades, of Europe, have cut off the supply of food from the Baltic, and yet the price of flour in Liverpool is but 23*s.*, or $5·50 per barrel, being equivalent to *considerably less than four dollars here.** With the opening of the ports of the Baltic, prices will fall still lower, and our export of food of all descriptions to "the great grain market of the world" must totally cease. The power of the farmer to consume cloth and iron has already greatly fallen. The wages of his labour have fallen and they must fall still further, for we appear to be destined now to see grain and flour at as low a price as at any period of our history. With each step downwards, the power of the farmer to consume cloth and iron must diminish, and mines, and furnaces, and mills must be abandoned, and more and more of those still employed in them must seek the West, unless they will consent to work at *the diminished wages* consequent upon the introduction of *the new system that was to emancipate labour from the effects of the old one*, under which the power of consumption doubled in four years. With each such transfer, wages must fall still lower, for with each the surplus food, and wool, and cotton must increase, as with each the power to consume cloth and iron must diminish, and thus by degrees shall we approximate the rate of wages common in the Eastern hemisphere, and such must be the effect upon the South and South-west, as well as upon the North and West. The more the people of the North are *driven* to the work of cultivation, the greater will be the surplus of *all* agricultural products, the lower will be their prices, and the smaller will be the return to the labour and capital employed in producing them.

The wool-grower, who received 22 cents in 1845, now has 20. Where he then had 30, he now has 28, and there is every prospect of a further and great reduction. Old factories are closed, and new ones have ceased to be built. Foreign cloths have taken the place of domestic ones, and the power to consume cloth of any kind has diminished, and must continue to diminish.

The planter, who was to be enriched by the new system, is almost, even when not quite, ruined. The same quality of cotton that yielded him, in Liverpool, in January, 1847, seven pence three-farthings, now sells for four pence half-penny. He is clothing the world at his own cost, and to his own ruin. The thousand million of pounds that he now sends to market will exchange for less cloth and iron than he could have for three-fifths of that quantity five years since. The whole product of his great staple, notwithstanding the vast increase of population, is but little more than it was ten years since, and yet the average yield to the planters has not been five cents per

* For a table, showing the net product in New York, resulting from given prices in Liverpool, see page 52. One of the reasons why produce continues to be shipped is, that freights have fallen so low as to be almost ruinous to the ship-owner. The table is based on the payment of 2*s.* 6*d.* on a barrel of flour. In the few weeks that have elapsed since the date of its preparation, freight has fallen steadily until it has now reached 1*s.* 6*d.*, making a difference of 24 cents.

pound, being less than the cost of production.* Rejecting the great domestic market, which doubled in five years, and would have doubled again in five years more, he has looked entirely abroad, and the effect is seen in the fact that he is everywhere endeavouring to substitute food for cotton, and thus to cut off one of the great markets of the West. The farmer, having proved "the great grain market" of Europe, and found it a failure, is now to lose that of the South, after having destroyed the manufacturers of the East, and compelled them to come to the West, to become competitors with himself in the supply of food.† We beg our readers to look fairly and candidly at all these facts, to lay aside prejudices, and to say if we are not right in predicting that the prices of food must sink to a point as low as any we have ever seen.

That the power of consuming domestic products is diminishing, and that it tends to diminish, is beyond a question. How is it with foreign ones?

In 1846, with a population of 21,000,000, *besides paying off a large portion of the debts contracted for in the free trade period a few years since*, we consumed to the extent of $110,000,000, being per head, $5·25.

In 1847, the increase of population was 750,000, and the consumption was $116,000,000, or per head, $5·33.

In 1848, we exported many millions of specie, and *ran largely in debt by exporting great quantities of certificates of State and United States loans*, and were thereby enabled to consume $127,000,000, the population being further increased to the extent of 750,000—average per head, $5·60.

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* The cost of making 331,136 pounds of cotton last year, upon *one* of the best plantations of South Carolina, was $17,894 48, or a fraction over five cents and four mills a pound, including freight and commission, as well as interest upon a fair valuation of property.

The cost, exclusive of freight and commission, and including interest, of making 128,000 pounds upon the "cane-brake lands of Alabama," last year, was $6,676 80, a fraction over five cents and two mills a pound.

This is considered the richest cotton land in the world, and although the crop was called a small one, it was probably about an average one.

The field hands upon this place numbered seventy-five, counting all over twelve years old, which gives a fraction less than four and one-third bales to each.

Now this crop has to be hauled over about twenty-five miles of the worst road in the world, when wet, as they usually are at the time the crop is ready to go to market, and then down the difficult and dangerous navigation of the Tombigbee River.

I am satisfied that these two crops give a better showing than three-fourths of the cotton crops of the United States. My own opinion is, that whenever cotton is below six cents, it does not pay interest upon the capital invested, except, perhaps, in some few cases.—*Letter of Solon Robinson, to the Editor of the National Intelligencer.*

† South Carolina is now engaging largely in the culture of wheat, and everywhere the planters are abandoning cotton for sugar, as is shown in the following letter:—"On the day I left General McAustin's, I dined with Wm. G. Johnson, whom many of my readers will recognise as an old and very intelligent cotton planter. Finding he could not continue to clothe and feed a large number of negroes, many of whom had grown old with their master, he has abandoned cotton altogether, and suffered a large and once fine plantation to fall to decay, and wear the weeds of desolation, using it only as a stock farm and home for himself and old servants, while he has put all the able hands upon a sugar plantation, owned in company with his son-in-law, Wm. B. Walker, at Bayou Mauchac. There are several other abandoned plantations in Mr. Johnson's neighbourhood, where buildings and fences are tumbling in ruins, and beautiful gardens grown up in briers and bushes, and large fields covered with broom sedge, the whole making a scene of desolation that is painful to pass by. And these things are not only here—they are more or less to be seen all through the cotton region. For the truth is, cotton cannot be grown at the present prices. Mr. Johnson thinks that sugar can be made at three cents a pound, better than cotton at six; and that anywhere within the limits of sugar-growing, the same hands and lands will average, one year with another, one hogshead of sugar for every bale of cotton."—*S. Robinson.*

In 1849, our power to import is yet maintained only because *every packet and every steamer carries abroad large quantities of evidences of debt.*

That such cannot long continue to be the course of things, must be obvious to every one. State stocks cannot be made to any further extent, and those in market must be soon exhausted. The remittance of specie must be recommenced, and with every step in this process, prices must fall, and the power of consumption must be still further diminished. New York is now draining the West. Every day brings large remittances from the valley of the Mississippi, and each such remittance palsies the operations of that portion of the Union, diminishing the price of labour and the reward of the labourer.

The advocates of the existing system fill their columns with accounts of the large exports of food, but they *do not* inform their readers that the whole is a mere gambling speculation, that must prove ruinous should the English crop prove a full one. They *do not* inform their readers that at any reasonable freight the present price of flour abroad would yield here but $3·75 per barrel, or that if the crops abroad turn out well, speculation will be at an end, and prices here must fall below $4. They *do not* tell them that with all their boasted exports of food, and all the vast amount of debt now being created, there is a daily demand for specie to go abroad in payment for food imported in the form of cloth and iron, and that every such export tends still further to diminish the prices of commodities that are to be exported, to compel an increase of export, and thus to produce a further reduction of prices. The weight of provisions exported, *via* New Orleans, is greater by fifty-five millions of pounds, or more than fifty per cent., than in 1848; and on the lakes the export of grain has been so great that, at Buffalo, we are informed, "there is not storage room" for the vast quantities that have arrived, and yet *each day brings a remittance of specie from the West*, to make amends for the deficit in prices produced by the adoption of a system that renders us dependent on "the great grain markets of the world" for consumers of our products. New York is glutted with foreign food, in the form of cloth and iron, for which there is no market,* and with domestic food that cannot be exported to any port in the world, except at prices far below those now paid by our own people, engaged in the production of cloth and iron.

The ship-owner was to be enriched by the new system, but freights have fallen to a point almost as low as we have ever seen, notwithstanding the unexpected demand created for California, taking more than 300 ships out of market. But for that, they would have been far below even the present rate. How long they are to remain even where they are, no one can guess. But a short time since 2*s.* 6*d.* was the charge for transporting a barrel of flour to Liverpool. Gradually it fell to 2*s.*, 1*s.* 10*d.*, 1*s.* 8*d.*, and now it has reached 1*s.* 6*d.*, a rate that is ruinous to the ship-owner. Should the English crop of grain be a full one, it is not improbable that the rate may fall to 1*s.*, which is the lowest point, as we believe, ever known.

The owners of steamboats were to be enriched, but the transport of mer-

* "Glasgow Iron Market.—The pig iron market is very quiet; orders at 42*s.*, cash, for mixed Nos. No. 1 was sold to a limited extent at 43*s.*, and No. 1 Gartssherrie at 44*s.*, cash. The heavy stocks of Scotch pig iron in America, and the unfavourable advices, per Cambria, will have a depressing influence on prices here."

"At the late Leipsic fair, very few cloths were presented, and these mostly of a very inferior quality, as it was supposed the market would be heavy. About thirty American buyers were present, and, contrary to expectation, the sales showed an advance on former prices, the stock being almost entirely closed for American account."

chandise tends to diminish. The iron man cannot sell his iron even at the present low prices, and the wheat man cannot sell his wheat, and each stores it up in hopes of a change, the consequence of which is, that steamboats are unemployed.

The cities were to be enriched, and one of the "benign results" of the new system was to be that of making New York the great commercial city of the world; but throughout that city there is a universal complaint of dulness of trade, preparatory to a reduction of rents, and discontinuance of the building of houses.

The railroads were to have a vast business, but the grain markets of Europe have failed, and the consumers of the East have gone to the West to become producers, the necessary consequence of which must be a diminished power of consuming the manufactures of the East, and a diminished business for roads. Those who, in 1847, united for the making of roads, have been almost ruined by the effects of the last two years, during which the new system has maintained the price of capital at from one to three per cent. per month, and the disposition to make new roads is rapidly passing away.

The capitalist was to be enriched by the new system, under which there was to be a cessation of "the war upon labour and capital." The direct effect has been almost to ruin every man engaged in the payment of wages for labour. The man who had contracted to furnish the means with which to build a mill or a railroad, disappointed in the receipts from his business, was compelled to borrow money at two per cent. per month, and thus was he impoverished; while the usurer, the man who would not employ labourers, grew rich. With time old contracts have been worked out, and that market for capital having passed away, the extreme of high prices has been followed, and appears likely so to be, by the extreme of low ones. Loans are now being made at four per cent. Pennsylvania stocks, paying $4\frac{3}{4}$ per cent., are at 90. United States sixes are at 116, and thus governments are enabled to borrow at low rates, *because the market for labour and capital has been diminished by the new system.* Railroads are still made, where the object is to force trade to take some particular direction, but not as a mode of investing capital with an expectation of profit. Furnaces have ceased to be built, and most of those now in existence are likely to be closed. Of sixteen mills intended for the production of railroad iron, twelve are now closed, and the remainder are likely so to be. Cotton mills and woollen mills have ceased to be built. Ships are unprofitable, and steamboats are already in excess of the demand. Coal mines are no longer opened. Machine shops are in many cases almost entirely idle. Look where we may, it is impossible to discover, as we believe, any single mode of investing capital in a way that will yield a profit, except, perhaps, in speculating in government stocks, or land-warrants, both of them the product of the same system which gave us the tariff of 1846. The "war upon labour and capital," that was to terminate with the enactment of that law, has only now commenced. Capital and labour are both superabundant, because the labourer has no longer the power to command the use of the capital that was needed to render his labour productive, and the waste of labour, at this moment, from want of demand for it, *is more than would pay for all our imports* from every part of the world.

In 1846 we built roads, and furnaces, and mills, to an extent never before known, and *we paid off our debts abroad.* In 1849 we build nothing, and *we run in debt abroad.* In 1846 we built them by aid of domestic food, and cloth, and iron. In 1849 we are importing foreign food in the form of cloth

and iron, while our granaries are choked with that for which we have no market.

There is a glut of every thing needed for the comfort and convenience of man, because domestic exchanges are suspended. Throughout the West the farmers are storing away their grain, in hopes that another potato-rot may give them a market, and while they keep their food on hand they cannot pay for cloth or iron. Throughout the South, planters are combining to diminish the product of cotton, and increase that of food, while the farmers are unable to discover any mode of disposing of their surplus. The collier closes his mines, in hopes that by diminishing the supply he may obtain a price that will enable him to pay to his men such wages as will enable them to buy food and clothing. The wool-grower stores away his wool, in hopes to raise the price, and he can buy no cloth or iron. The iron manufacturer closes his furnace, because to sell at present prices would be ruin, and his people can buy neither food nor clothing. The manufacturer stores away his cloth, in hopes of better prices, and he needs little fuel or iron. These, however, are but "weak inventions," and soon will they be found to be such. The real difficulty consists in the fact that under the new system the power of farmers, and labourers, and working-men of all descriptions, to consume the products of labour, is diminished, and the system must be changed, or there must be a large reduction in the price of labour. The power of production is now less than it was two years since, and consumption must conform thereto.

There is a universal paralysis, and it must increase from day to day, until there shall be a change of system. We have now the real "war upon the labour" of the people of the Union, and so long as it shall continue, the condition of the labourer must continue to deteriorate. Thousands of men who would have found employment in the mines and furnaces of Pennsylvania, have gone West in the present year, to swell the amount of our surplus of food, and tens of thousands more will follow. Such is the case in every department of industry, and such will it continue to be, increasing in intensity from week to week and from month to month.

Were it possible now at once to re-enact the tariff of 1842, with a certainty of its permanence, how instantaneous would be the change! Every furnace and rolling mill, and cotton and woollen factory, would instantly be set to work, and men would everywhere be seen building new furnaces, and mills, and factories, and the wages of labour would instantly advance. The demand for food, for cotton, and for wool, would cause an immediate advance of prices; and the producers of cotton, and food, and wool, would find themselves enabled to purchase cloth and iron. The "war upon labour" would have ceased, and peace and harmony would have been restored, because exchanges had re-commenced. Consumption would then grow as rapidly as it did in 1845 and 1846, because production had increased, as the producer and consumer had been again enabled to take their places by each other.

Having first taken our opponent's "facts," in illustration of the beneficent action of the system of protection, by aid of which the farmer was enabled to entice the owners of looms and anvils to come and take their places by the side of the plough and the harrow, we have now furnished a few of our own in illustration of "the benign results" of the system of 1846—the offspring of that politico-economical school which looks to the growth in number of ships and wagons, of sailors and wagoners, and of cities filled with men who grow rich by the work of transportation and exchange, as evidences of an increase of wealth; and fails to mark the fact that men everywhere desire to avoid the necessity for employing ships and wagons, transporters and exchangers, and that everywhere they grow rich and increase in comfort and

happiness as the consumer of food is brought more and more near to the producer of food.

With every step in this approximation they find themselves enabled to consume more largely. The man who, stationed by the side of the producer of food and wool, employs himself in converting them into cloth, can consume of both more than he could do if they came to him at a distance of hundreds or thousands of miles, burdened with the cost of transportation: and the producer of food can consume more cloth when he gives in exchange for it the commodities produced on his farm, many of which, from their bulk, would not bear transportation, or from their perishable nature would be lost if not consumed on the ground, and for much of it the labour of himself, his sons and daughters, his wagon and horses, that would otherwise be unemployed.

Consumption is large wherever it is unburdened with the cost of transportation and exchange, and where it is large producers grow rich. It diminishes with every increase of the quantity of labour required for effecting exchanges, and with each such increase producers grow poorer, because production diminishes. If, then, the farmers and planters, the labourers and capitalists, desire to see the power of production restored to the point at which it stood three years since, enabling them profitably to employ their labour and their capital, let them unite in the effort to obtain the adoption of measures calculated to bring the loom and the anvil to take their natural places by the side of the plough and the harrow.

LABOUR-SAVING IMPLEMENTS.

"The introduction of all labour-saving tools should always be carried to the extent of the farmer's means—it is a saving of capital in the saving of labour; the horse-rake, for instance, which will save the labour of ten men, will, on a large scale, save to the farmer its cost daily.

"Hussey's Reaper, which costs $100, will pay for itself in one year, in a crop of 1500 to 2000 bushels, in the saving of grain alone, to say nothing of the greater saving in labour, and the neatness with which it does its work. All these things should enter into the daily calculations of every tiller of the soil, and every farming utensil should be selected with an eye not only to the cost of repairs, but the neatness and facility with which it does the work."

Here we may mention, as to Hussey's Reaper, that we understood lately, in Baltimore, there were as many engaged as he could have done by harvest, and that the greatest demand came from where they have already been most in use, and their value best known. Some improvements have been made, with especial reference to giving them greater strength in essential parts.

A Fox's Lair.—The keepers and labourers of Mr. Legh, of Adington, suspecting that there was a brood of foxes in the park, set to work to dig them out on Saturday last, when they found six cubs; and in the course of their digging in the hole they found the following ample stores provided by their parent, in a greater or less state of preservation:—the remains of one barn-door fowl, of four pheasants, one wild duck, two leverets, eighty rabbits, one jackdaw, one thrush, five rats, two mice, and one lamb. Some of these were nearly whole and fresh, others in a state of decomposition.—*Macclesfield Courier.*

ZINC.

This metal was first mentioned by Paracelsus; but its ores were known at a much earlier period. In commerce it is often called *spelter;* and is obtained either from the native carbonate of zinc, called *calamine*, or from the native sulphuret or *blende* of mineralogists. These ores are roasted and mixed with charcoal or carbonaceous flux; the mixture is put into a kind of crucible closed at the top, and perforated at bottom by an iron tube, which passes through the grate of the furnace into water; the vapour of the zinc distils downwards through this tube, and is condensed in the water. The first portions are impure, containing arsenic, and often cadmium, in which case the vapour burns with what the workmen call a *brown blaze;* when the *blue blaze* appears the zinc is collected. The zinc of commerce (which is not quite pure) has a peculiar bluish colour and lustre, a lamellar and crystalline texture, and its specific gravity is about 7. At common temperatures it is tough and intractable under the hammer; and when heated to above 500° it becomes brittle, and fuses at about 770°. But at temperatures between 220° and 320° it becomes malleable and ductile; so that it may be beaten out under the hammer, and rolled into sheets and leaves, and drawn into wire, in a manner extremely remarkable when its highly crystalline texture is considered. Being a cheap and light metal, and one which, after having been superficially oxidized, long resists the farther action of air and water, it has lately been much employed as a substitute for lead in lining water cisterns and covering buildings; it has also been lately employed in the curious operation of transferring printing, (under the name of *xincography.*) It is a very inflammable metal, burning in the flame of a spirit lamp with a brilliant white light; but the oxide which forms interferes with its continuous combustion, which can only be carried on at a high red heat, when the vapour of the metal burns with an intensely bright flame, and yields at the same time a quantity of flocculent oxide, which floats about in the surrounding air, and was formerly called *philosopher's wool, pampholix,* and *nihil album.* The equivalent of zinc is 32, and that of its oxide 40. Though zinc is apparently without action upon water, yet it is a most oxidable metal; but the insolubility of its oxide protects it from farther action, so that when a film is once formed upon it, it resists farther change; but when a little acid is present in the water, and the zinc not quite pure, it is rapidly acted upon, and oxidized at the expense of the water, which evolves abundance of hydrogen, (when dilute sulphuric acid is used,) and the oxide of zinc is removed and dissolved by the acid. It is this action which renders zinc so powerful a generator of electricity in the voltaic pile. The salts of zinc are mostly soluble, and have a nauseous, astringent, and metallic taste. The *sulphate of zinc*, or *white vitriol*, is employed in medicine as an emetic and tonic, and the oxide and carbonate are externally used in the form of ointment. The *chloride of zinc* is a colourless compound, fusible at a heat a little above 212°, and known to the older chemists under the name of *butter of zinc.* Brass is an alloy of zinc and copper.

We have given place to the above from Brande, by way of a first offering to friends in Tennessee, New Jersey, and elsewhere, who have discovered ores of zinc, and are going into the business of preparing it for market. For the sake of the farmer, we want to see as many people as possible converted from being rival producers into profitable consumers of the products of the plough. Let the laws have that tendency.

PROSPECT FOR WHEAT IN TALBOT COUNTY, MD.

May 30, 1849.

Dear Sir:—Above I annex a check for $3, my subscription to your valuable paper.

Our wheat on good land is very promising, but on unimproved land, and where seeded late, it is greatly injured by the fly and bud-worm. I think the day will come when growing that crop after corn will be abandoned, from the difficulty of seeding it in time. We have not been able to dispense with fires except for three or four days, and the grass is very late. Almost an entire failure of clover. Our stock looks badly, and I should not be surprised if the skinning process had been resorted to in some instances, as was common here some twenty or thirty years ago* on cows of delicate constitutions, about the first of April.

Dear sir, your friend and obedient servant, J. N. H.

MANUFACTURES AT THE SOUTH AND WEST.

We take the following from one of the papers of the day, desiring to call the attention of our readers to the fact that everywhere throughout the South and West common sense is teaching the farmers and planters that "diversified industry" is necessary to prosperity, and that if the owner of the plough would grow rich, he can do so only by bringing the loom and the anvil to take their places by his side:

"Throughout the South, the attention of all classes appears to be turned to the diversion of a portion of their labour from the raising of cotton to manufacturing.

"A meeting of *mechanics and others* was recently held at Charleston, S. C., to form an association for their mutual benefit. The special object at which they aim, is to impress upon the public mind at the South, the necessity of a more diversified industry than prevails—of diverting a portion of their capital and labour from the culture of cotton into the various branches of manufacture, &c.

"In Georgia, they reported to the last Legislature, 32 cotton factories; while in Virginia, North and South Carolina, and Alabama, they are rapidly increasing. In Florida they have one cotton factory worked by slave labour, while the resources of the great valley of the Ohio and Mississippi (for manufacturing purposes) remain as yet wholly undeveloped."

All this would long since have been done, had ***the nation***, twenty years since, adopted the protective system as its fixed and determined policy. Had that been done, we should now occupy that position predicted by the Secretary of the Treasury, in his last report, as a necessary consequence of giving full protection to the producers of food and cotton in their efforts to induce consumers to bring their labour and capital to their sides, and thus enable them to apply themselves to the production of hay and corn, and turnips and potatoes, commodities which the earth yields largely, and which,

* Then they made two crops a year, as thus:

"Sambo, is your master a good farmer?" "Oh yes, massa fus-rate farmer—he make two crops in one year." "How is that, Sambo?" "Why you see he sell all his hay in de fall, and make money once—den in de spring he sell de hides of all cattle dat die for want of de hay, and make money twice—dat's two crops, massa."

Except that the *hay* crop is never made!

therefore, will not bear transportation. That officer tells us that whenever our manufactories shall, by aid of a protective tariff, have been fully established, the manufacturers will be clamorous for perfect freedom of trade; and he must, therefore, believe that they will then have enabled themselves to supply cloth and iron at home, at prices not exceeding those at which cloth and iron are sold in other parts of the world, and thus have placed themselves in a position to do without protection. In corroboration of this view, and coming from the other side of the question, we take the following from an exchange paper which advocates freedom of trade, which, after describing a new and important addition to the list of American manufactures, says:

"This adds one more chaplet to the wreath of American manufactures. Article after article, of foreign make, is cut off or *cut out* by American skill and ingenuity, until we are obliged to come to the conclusion that with judicious protection in infancy, the time is not far distant when the child, grown to a stalwart youth, will be able to throw down the gauntlet of free trade, and bid defiance to the world."

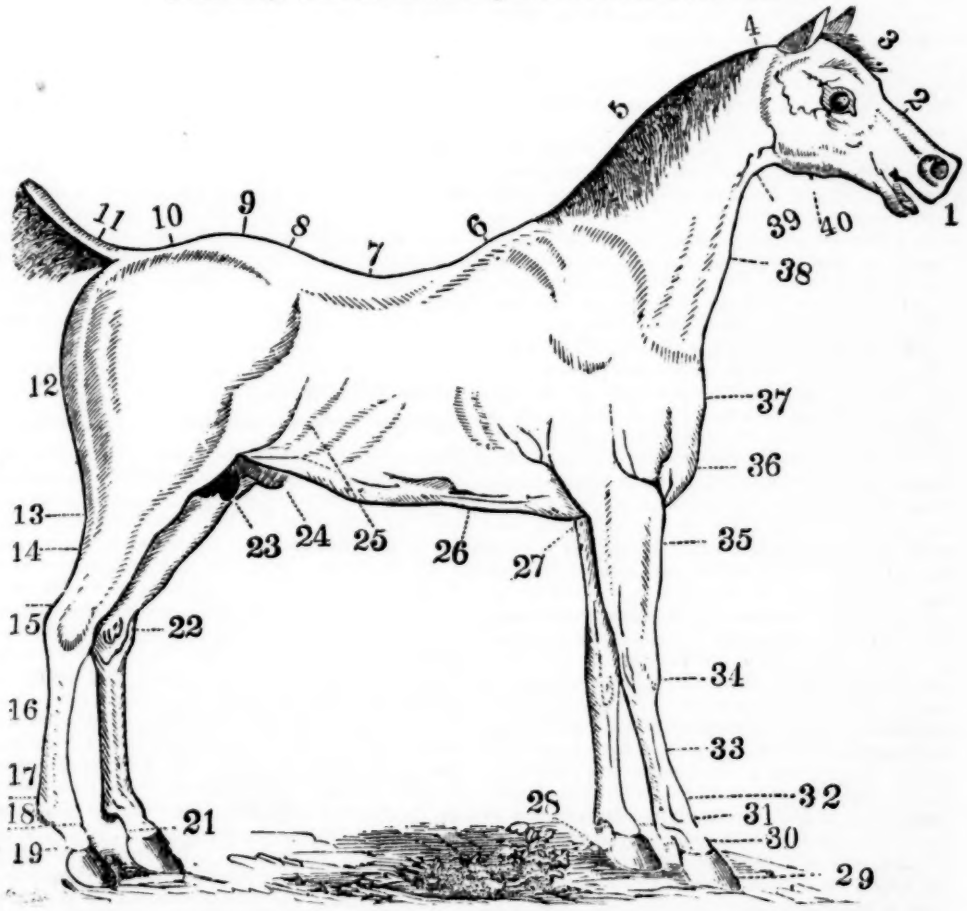
Let every man who desires to see soon established that perfect freedom of trade at which we are ultimately destined to arrive, unite in the effort to obtain that legislation which is needed to prevent the necessity for squandering over millions of square miles that labour and that capital which, if men could be permitted to live and work together, would enable them to cultivate the richer soils, with double return to both.

Thin Seeding.—The advocates of thin seeding for wheat generally lay great stress on the fact that the plant will tiller out, when thin sown, so as to cover the vacant spaces of ground. There is no doubt that this will be the case to a great extent, but it is, I think, certain that the plant is weakened by sending out so many stalks, and the grain rendered very uneven in ripening. I saw an instance of this last autumn, in a field where the wheat was thin, but very favourably situated in other respects, being a good soil, drained and unshaded. The preceding crop was cabbage, manured, in drills. The wheat was very thin in the early part of the season, but tillered greatly, and looked very well in summer; however, it was most uneven in ripening, some spots being ready to cut ten days before others close beside them. I think this can only be accounted for by the plants sending out so many extra stalks. Do the thin seeders recommend sowing thinly, later in the season than the end of September or beginning of October? It is not likely that the sparing plan, with respect to seed, will ever be much practised in this country, experience being against it.—*T. Bub, Ireland.*

Steam Plough.—A series of experiments of the application of steam power to the plough, has lately been made on a farm at Whitley, in the occupation of Messrs. Barrett, Exall and Andrews, the extensive iron founders of this town. Some practical and scientific gentlemen were present on each occasion, and they appeared much gratified with the success which attended the exertions of Mr. Exall, in effecting so great and important an improvement in the working of this implement. The experiments were regarded as satisfactory, on the whole, and, with a few slight alterations, the plough will be available for almost every, and especially heavy kinds of land.—*Reading Mercury, (England.)*

THE HORSE:

(Prize Essay, which obtained, in England, the reward of Five Pounds.)



TERMS COMMONLY MADE USE OF TO DENOTE THE EXTERNAL PARTS OF THE HORSE.

1. Muzzle.
2. Race.
3. Forehead.
4. Poll.
5. Crest.
6. Withers.
7. Back.
8. Loins.
9. Hip.
10. Croup.
11. Dock.
12. Quarter.
13. Thigh, or Gaskin.
14. Ham-string.
15. Point of the Hock.
16. Cannon.
17. Fetlock.
18. Large Pastern.
19. Small Pastern.
20. Hoof.
21. Coronet.
22. Ham, or Hock.
23. Stifles.
24. Sheath.
25. Flank.
26. Girth.
27. Elbow.
28. Heel.
29. Hoof.
30. Small Pastern.
31. Large Pastern.
32. Fetlock.
33. Cannon.
34. Knee.
35. Arm.
36. Breast, or Bosom.
37. Point of the Shoulder.
38. Windpipe.
39. Gullet.
40. Jowl.

AN ESSAY ON THE EXTERNAL FORMATION OR STRUCTURE OF THE HORSE, AND ON THE DISORDERS ORIGINATING THEREIN.

Plerique omnes faciunt adoles-centuli
Ut animum ad aliquod studium adjungant, aut ad equos
Alere, aut canes ad venandum, aut ad Philosophos.
TERENCE.

I PURPOSE, in the following pages, first, to give a succinct, but, I trust, useful and explicit description of the exterior conformation—the *make and shape* of that valuable animal the *Horse*; discriminating the *originally well formed tit* from the *cross-shaped*, and *likely-to-become-diseased brute*, and the *nag* that can go with safety and pleasantry on the road, or carry sixteen stone across a heavy country, from the *imbecile* and *weakly-constitutioned spider*; and, lastly, to show by what ready and certain modes we may detect unsoundness in the purchase of a *prad*, and *when* we are to pronounce that *he is perfectly sound*.

The HORSE, in the estimation of a sportsman, stands preëminent above other quadrupeds, as man does above every other animal: not only do matchless beauty and strength of form, combined with unrivaled speed, distinguish him, but the extensive utility he is of to us, and the share he takes in our diversions and perilous enterprises, serve to inspire us with even a de

gree of affection for him. Every horse is adapted to some particular purpose; for horses not only differ in kind, but, like men, in utility, in temper, in stamina, &c., and the selection of them, in regard to these particulars, constitutes one of the most arduous and nicest duties of the *connaisseur*; he must readily acknowledge good or bad conformation—trace genealogy in the outline, and discover a *je ne sais quoi* about the *tout ensemble* that denotes good or bad instinctive and unalterable qualities.

In describing the good and bad points of a horse, it will be necessary to make use of many terms, denoting different external parts, which, to all *horsemen* will not require any explanation; lest, however, the reader be unacquainted with some of those terms, a plate is annexed, having references to the parts themselves in the figure of a horse. It requires some experience, but more attentive observation, to be what, in modern *horse phraseology*, is called a *good judge*; i. e. (if we were asked to define a good judge,) to know, *at once, by a cast of the eye*, whether the nag, as soon as he is *pulled out*, is *likely to suit*: is he *cut out for a hackney*, or is he *calculated for harness?* Does he *look like a hunter*, or has he any *good looks* about him? Does he *show any blood*, or is he *all over a mongrel?* In fine, is he *the sort of thing* you want, or won't he do until he meets with a *greenhorn?* These, and various other important considerations we hope to unravel the nature of in the course of this inquiry, offering such remarks, from time to time, as may prove of practical service to the young and inexperienced horseman. At first sight of a horse, a *judge* takes a general survey of him, and if he observe any apparent disproportion or deformity, his attention is at once fixed to that particular point. Every horse, for example, that is tolerably well formed, should exhibit due proportions of limb and carcass; in fact, nine out of ten have as much carcass as is equal to the area of the space occupied by the legs in ordinary standing; but should his legs be extraordinarily long, or his carcass disproportionately small, he is said to have *too much daylight under him*, and that is certainly no mean objection. Should his head be very large, his neck of disproportionate length, his fore legs *stand under him*, or his quarters be *ragged* and ugly, such glaring imperfections cannot fail to attract our notice as soon as, or even before, the groom *has set him on his legs*. But we shall have occasion to particularize these things in a detail of the perfections and imperfections of the different parts entering into the composition of the animal.

The exterior of the horse may be divided, for the convenience of thus describing his several parts, into head, neck, body, and legs. First, we shall delineate a good head. The *nob* should be small. A large head is not only a *plain* head, but a bad point, inasmuch as it really, under certain circumstances, detracts from the powers of the horse; he has, in fact, more to carry—it is a burden to him, and the only way in which he can possibly carry it to advantage, is at the extremity of a short and upright neck. Like the weight of a pair of steelyards, if it is supported by a long and horizontal neck, its burden becomes enormously augmented, so that the weight transmitted to the fore extremities (for those parts support the head and neck as well as half the carcass) is much increased, and, from the natural preponderance of it before, is very likely to prove the cause of the horse's *falling down*, more especially if the rider is heavy, every trip or mis-step he may chance to make. In addition to all this, a *lawyer* (or big-headed horse) is apt to have a *hard mouth*, or rather, we say, *no mouth*, so that we are always apprehensive of his being *heavy in hand*, and *unpleasant to ride*. It is proper, however, to state, before we proceed farther, lest we incur censure for these remarks, that the formation of the neck, and *the mode in which the head is set on*, and *how he carries it*, will have much to do with the head being objectionable from its size, and with his being light or heavy in hand; for we have known many *big-headed horses ride well*, and be as *safe* and as *light in hand* as any others. Next to size, its shape becomes a consideration. Every *feature* should give animation to the countenance; let the forehead be *broad* and *flat*; the eye *staring* and *full of fire*; the ears *thin, fine*, and *often erect*; the nostrils *circular, dilated*, and *reddened within*; the lips *soft, thin*, and *hairless*; the jowl *extended*, and the cheeks *well marked*.

"Fire from his eyes, clouds from his nostrils, flow."

This, at least, is what we would have it in the thorough-bred, and as a general rule, the nearer that of any other description of horse approaches to it, the better the *family he springs from*, and the more sanguine we may be in our prognostic of his abilities. That such a horse *looks like a sticker*, or is a *perfect gentleman about his nob*, are no uncommon nor very unmeaning expressions in the mouths of *sportsmen* and *copers*. But his head may be very long, or it may be very short, though we do not know that either is particularly objectionable, except as an eye-sore, if the countenance is something like what we have just described; unless he be a *Yorkshireman*, and then, certainly, we should not fall in love with such a big *canister*. The *face* ought to be perfectly straight, (see plate,) and the *muzzle*, in the *blood horse, square*, and such as will *go into a pint pot*; a *Roman nose* (one in which the face is curved) is by no means desirable, though his *napper* be but of ordinary dimensions; it is seen more commonly, however, in a big head, which it, in a side view, makes appear not only much larger, but exceedingly ugly; this may be said to constitute a *plain Yorkshire head*. Withal, the head, to render it handsome, should be *well set on*; its junction with the neck should form a *sort of curve*, so as to leave ample space in the throat for a large and prominent *gullet*, by which we may judge him to be a *good-winded horse*.

The neck now demands our attention: if good, the crest will form an arch of agreeable curve from the *poll* to the *withers*,

"With neck like a rainbow, erecting his crest."

It will be of proportionate length, and progressive increase in breadth, as it approaches the chest. A *long* neck, if it be *straight*, or but *little curved*, is objectionable, for reasons we stated when speaking of a large head; a *short* one, however excellent it may be on the principle of the steelyards, is never *handsome* and seldom exists without rendering even a good hackney *piggish*. That *short-necked* horses are better winded than others, because the air has less distance to pass to and from the lungs, is an opinion to which we cannot subscribe. The neck should also be *thin*, not *thick* and *heavy*, and *rounded* and *straight along its lower margin*; should the *canal* of the *jugular vein* be

deep, and the windpipe *full* and *prominent* below it, we may regard it as a sign of *good wind*. When the arch of it is reversed, *i. e.* below instead of above, and the crest, or what ought to be the crest, near the withers, is hollow and sunken, the horse is said to have an *ewe-neck*, one of the greatest natural deformities common to these parts. Under these circumstances it is usual for a *dealer* to say that the neck is put on the wrong side upward; but, in reality, it appears to arise from the junction of it with the chest being too low down.

Of all the points of a horse, the shoulder, for a hackney, or a hunter, is of the utmost consequence; without a *good* shoulder, no horse *can ride well*; he may be a good *harness horse*, or he may *race* well; but it is physically impossible for him to carry his rider with ease and pleasure on the road. These are no speculative opinions, but facts, grounded on the experience of all men who *know a horse when they see one*, and the result of our own every-day observations—so much does the action of the fore extremities depend on the structure of this part. And now, what is it that constitutes a *good* shoulder, and how are we to know a *good* from a *bad* one? In order to render our answers to these questions intelligible, it will be necessary for us to deviate a little, and say something on the *internal* mechanism of the part. The *scapulæ*, or shoulder blades, are attached to the ribs by many powerful muscles, which move them, during the action of the animal, round their own axis, or, at least, in a very similar way; and though they can only revolve through the small segment of a circle, that segment is greater in proportion as they are more obliquely placed against the sides of the chest; hence it will be seen, that what is called an oblique shoulder is most advantageous for motion.—Again, the *best shouldered* horses have, generally, THIN withers; but this is not indispensably necessary to the formation of a good shoulder, for we know some, and *good judges*, who are of a contrary opinion. We must confess, however, for our own part, that we prefer *fine* withers. The *thickness* of the withers will depend on the conformation of the chest and the obliquity of the *scapulæ*, and not so much as some persons, high in veterinary repute, have supposed, on the length of the *dorsal spines*.* Now, if, in viewing the fore parts of a horse, we find he rises upon the withers, (and we must take care that this be not an illusion, produced by placing his fore legs upon rising ground,) and that no *traces* of his blade-bone can be seen under the skin, but all appears *smooth* and *level*, we may conclude that the shoulder is *oblique*; though a more direct proof is furnished us by carrying the eye from the summit of the withers to the extremity of the *point of the shoulders*. If it is upright, or nearly so, unless it be in a thorough-bred horse, (such a shoulder is only *fit for the collar*,) we shall perceive an irregularity under the skin, just below the withers, by passing our hand over the part, and find, on grasping the part, that it is *thick* and *clumsy*, because we are actually at the time grasping the *blade-bone* as well as *wither-bone*; though (as before observed) these may be *thick* from the construction of the chest.

A *lean* shoulder is one having *thin* withers, covered with *fine* and *genuine muscle*; a *loaded*, or *overloaded* shoulder, one with *thick* withers, clothed with *coarse* and *flabby* muscles; and the *thickness* of the wither, as was said before, depends on the obliquity of the *shoulder-blades*, and the proximity of their superior borders to the *dorsal spines*. That horses have been fast runners on the turf with *bad* shoulders, is no proof that they would not have galloped better and quicker with *good* ones; and we must recollect that in a racer the *hind quarters* are of primary importance, the *fore quarters* only of secondary consideration; but, on the road, we know that *bad-shouldered* horses are never *pleasant* nor *safe* hackneys; they *step short*, are *puddling walkers*, *roll about* in their *trot*, and are exceedingly likely to *go to prayers*.

The *fore-leg* should descend in a straight line from the bottom of their shoulder, *i. e.* in a lateral view; but when seen in front, it ought to incline gently inward. If the elbow projects directly backward, and the toe points with precision forward, we may rest satisfied that the horse is not *twisted in his fore legs*. Turning the toe *in* or *out* in standing is apt to be accompanied with distortion, or deformity of the limb. This circumstance, therefore, is seldom seen without materially lessening the value of an animal. Of the two faults, turning them *out* is the greater, for the pointing *inward* is seldom carried to the extreme. A *good* arm is *broad* and *thick*, *long*, when compared to the leg, and marked exteriorly by *muscular prominences*. The elbow cannot *project too far back*, and the *plumper* the *muscle* is immediately above it, the greater we may conclude to be the animal's powers.

The *knees* ought to be *large*, *broad* in *front*, and distinctly marked with several *bony knobs*; *lateral thickness* is, also, of much importance. When the *radius*, (the bone of the arm,) instead of descending in a straight line, is directed backward, so that the knee appears to recede from it, the horse is said to be *calf-kneed*, a term that well conveys the idea we have of this formation: it is always objectionable for the *saddle*, but not for the *collar*. The leg should fall in exactly perpendicular from the carcass, and be *short* when compared with the arm, the converse of this being indicative of weakness; and of sufficient *breadth* to enable a purchaser, even at a distance, to distinguish the *tendons* and *bone*, with perfect clearness, in their relative situations; for, if he cannot do this, there is reason for suspecting that he is *gummy*, the effect of hard work or premature use, and never a *natural defect*. Should the legs be *round* and *straight* below, they are called *stilty*, and

* Bones of the withers. It is contended, on another side, that the *situation* of the scapulæ has nothing to do with the *thickness* of the shoulder, but that it is wholly owing to the *length of the spinous processes of the dorsal vertebræ*. To establish this opinion must be proved two data, viz: 1st, that these spines are short, or comparatively so, in all *thick-shouldered horses*, and long in *thin-shouldered* ones; and, 2dly, that the converse of this *never* happens. To *one who has dissected shoulders*, these are certainly *home-thrusts*; such, at least, as we could not parry; though we know that the dimensions of these bones may and do, like those of most others, vary in different horses. But they also vary in their degrees of inclination; and may not this circumstance alone, in some measure, affect the construction of it? At all events, we know these facts, dray or cart horses have *wide chests* and *thick shoulders*; others with *wide chests* have *thick shoulders*, but with *narrow chests thin*, unless the *scapulæ* be *upright*. Now, if they who differ with us, mean to assert that all this arises *solely* from the length of the *dorsal spines*, we can only say, *credat judæus appella*.

are never *firm* and *good*. But the best and only correct way to judge of legs, is to pass *the hand down them*; if they measure much round, and the sinews feel firm, hard, and distinct, like well-braced cords, and if the intervening spaces between bone and sinew be *clean—free from gum*—we may pronounce that they are *good*.

The *fetlock*, as a joint, should be of large dimensions, proportionate with other parts; no joint, in fact, is too large, providing its *bony prominences* be distinctly seen with the naked eye, and its *ligaments* perceptible under our fingers. I need not, therefore, farther enforce this truth in speaking of these organs. *Knuckling over* in the fetlocks is a sign of original malformation, such as *uprightness* in the pasterns, or else is the result of hard work; and the tottering affection of the limb, accompanying this state, is caused by local debility and excessive irritability in the nervous system. The pasterns always deserve much of our attention; when *good*, their *length* is proportionate with that of other parts, and they incline, with *much obliquity*, downward and forward to the foot, should they approach the *perpendicular*, they are almost always short, and are said to be *straight* or *upright*; but when they approximate to the *horizontal*, they are long, and called, though erroneously, *oblique*; for they are not so obliquely placed, under these circumstances, with regard to the leg, as they are when properly constructed. Perhaps no part of the horse exhibits the wisdom of Nature more, in regard to the adaptation of it, in point of structure, to the purpose for which the animal was designed, than this: in the racer, for example, the pasterns are *lengthy*, and incline to right angles with the legs, whereby more weight is imopsed upon the hinder parts of the fetlock and hoof, in which situations are placed *pieces of mechanism* which by their elasticity serve as so many springs in diminishing the effects of concussion so requisite in this animal, which was intended to perform *swift* and *sudden* movements; but in the cart-horse, whose action is *slow* and *powerful*, the pasterns are *short* and *nearly upright*, so that most of the weight is thrown upon the main bones of the foot, and thereby his springs, which have less play than those of the Arabian or thorough-bred, are not so much acted upon; consequently less provision is made against concussion, for strength, and not elasticity, is sought for in the construction of this powerful animal. Horses with very oblique pasterns are more likely to *break down*, and for this reason they ought never to be shod with thin-heeled shoes; on the other hand, if they are very short and upright in these joints, they are seldom or never sure footed, and will soon become *stilty* and *groggy* from work.

The *hoof* next engages our notice, and this is a part of which we should be more than commonly scrupulous and nice in our inspection: "*No foot, no horse.*" is a trite but very true adage, and one that is not kept sufficiently in view by the purchasers of horses, or they would not have so frequently to *lament their hard fate* in having *gone to market for a screw*. First, we should look to the size of the hoof: a *small* foot is not only objectionable in itself, even though it be a natural formation, but is often a characteristic of disease; but a *small* and *upright* foot is a morbid structure, and is scarcely ever seen in any one but a *dancing-master*, or light-timbered tit. White hoofs are to be eyed with suspicion; they are really weaker, and more liable to disease than dark or black ones, and if a horse has one white and the other dark-colored, and he is lame, in nine cases out of ten it is the white foot that is affected. So much with regard to the exterior of the foot before it is *taken up*. Other considerations now engross our attention. Is it contracted? *i. e.* is its circularity destroyed by narrowness at the heels? A *good* hoof is *circular* in the tread, or nearly so, measuring as much from side to side as from toe to heel; but we frequently find those that are morbid measuring as much from toe to heel as twice the lateral diameter. On the other hand, the *wall* of the *hoof*, which should, at all times, be perfectly *smooth* and free from ridges, (the contrary indicating disease,) may be very *oblique*, in which case it is not only *circular*, but *spreads out*, even to a morbid degree, in the tread. Large, heavy horses, such as are bred in low, marshy situations, are most subject to have this kind of foot, in which parts of the country it is preferred by many people, who contend that their hunters derive advantages from it. As the *strong* and *upright* foot is likely to become *contracted*, so is this subject to a disease called *fleshy soles*; indeed, in the former, the sole is concave; but in the latter it is flat, on which account the two require different modes of shoeing.

The *body*, or *carcass*, may be subdivided into the chest, belly, and loins. So far as regards the *constitution* of the horse, his *stamina*, or his *bottom*, no part is of more consequence than the chest; but, like that of many other parts, no particular construction of it is the best for all kinds of horses. That of the cart-horse should be *circular*, *broad in the bosom*, and *large in the girth*; that of the thorough-bred more circumscribed, but not *flat-sided*, very *deep*, and, also, extensive in the girth; so that the two differ more in *width* than in *depth*. Had the racer possessed a broad, circular chest, his shoulders must have been thick, and his fore legs far apart; and no horse so made can gallop well or fast, though many such are ridden as hackneys; they are apt to have a rolling gait, and an awkward mode of going altogether, perceptible at all times to the *connaisseur in horse-flesh*; but we must be careful, even in choosing racers, not to run into the other extreme; for, if *both legs come out of one hole*, or he be *flat-sided*, he cannot endure much fatigue, is very probably a *bad feeder*, and certainly predisposed to disease of the chest. A *full* and *prominent* bosom is a fine point; and the ribs should *stand out* with sufficient curve to afford space enough within; for which reason, some, as we before remarked, prefer a *thickish shoulder*, if it be an oblique one; and another advantage accompanying such conformation is, that *we have something between our legs* when mounted, a property, certainly, that every horse ought to possess. As to the belly, its shape will depend much on that of the chest and loins. A *narrow-carcassed* horse can never *do much work*, readily loses his condition, and with difficulty recovers it, being, very commonly, but a *queer feeder*. We should have *something to kick against*, and unless he *carries his dinner with him*, his *bread-basket* cannot be said to be of the best description.

The *back* should be perfectly *straight*; a *hol low* back is a sign of want of strength; but it is often extremely pleasant to the rider. A *roach-back*, the reverse of a hollow back, is by no means handsome, though some argue that horses having such are stronger; one objection to it is

that it is apt to chafe from the saddle. The loins are a point that we should always be nice about. A *hollow* back and a *narrow* loin are generally indicative of natural weakness; but the latter is far more exceptionable than the former: a horse so formed can seldom carry much weight, soon knocks up, and often proves a bad feeder; his constant *hollowness* in the flank, and his *lank* appearance altogether, after a day's hunting, demonstrate how incapable he is of bearing the exertions required of him.

The *tail*, in regard to the manner in which it is *set on*, is not to be overlooked: a horse that carries *two good ends*, (of which the head forms one, and the tail the other,) always *looks grand—is a perfect gentleman in his appearance.* Above all others, the charger should possess this point in perfection, to coincide with the *grandeur of his carriage* in the ostentatious parade of a field-day. *Hinc bellator equus campo sese arduus infert.* The tail, in most horses, should form, when elevated, a straight line, or nearly so, with the back. A gentle declivity of the *croup*, however, from the summit of the rump, denotes the *blood-like quarter*, and adds much grace to this part in the thorough-bred: should this line decline very much, the horse is said to be *droop-arsed*, and the quarters lose much of their beauty as well as their natural power. Nothing is so ugly, in a *full-quartered horse*, as to see the tail set on low down, issuing abruptly from the rump, as if a *broomstick had been stuck in the place.* The dealers who indiscriminately fig all, often *spoil the sale* of a horse of this description by *curling the tail upward with a dose of ginger.* Some horses *carry a good tail naturally*—others, by means of art, having undergone the operation called *nicking. Gingery* or *peppery* hackneys seldom require *nicking:* indeed, hackneys are often called, from this circumstance, *cock-tails*, in contradistinction to *thorough-breds*, who seldom or never carry any but a *drooping tail*, better known by the name of *blood-tail;* a *cocked-tail* would be incompatible with a *blood-quarter:* hence it is that blood-horses should *never be figged*, or *nicked.*

The *quarters* may be *full*, *small*, or *fine and blood-like. Full quarters* are such as are possessed by cart-horses, large machine-horses, and hackneys able to carry great weight. These horses are wide in the hips, though their hips are but indistinctly marked, in consequence of being enveloped by large, coarse, flabby muscles. People are too apt to regard *wide hips* as an objectionable point, from their giving to the horse that appearance called *ragged hips*, which, indeed, are not only ugly, but denote bad conformation, though, of themselves, they denote good make; for the fact is that *ragged hips* are produced by a *bad* loin, and a *lank, flat* and *weak* quarter. Were these parts well formed, we should pronounce the hips to be of the best description. The *small* quarter is one that is often seen in a horse of this form; though the general contour of it may be *regular* and *uniform*, it is altogether *disproportionately small* when compared with the carcass: if it grows narrow toward the hinder part, the animal is often said to be *goose-rumped.* But, of all other structures, the *blood-like* quarter is the best adapted for speed: in it the tail is *set on high up*, and the hips are high and prominent, but not *ragged;* so that many of our best racers are *higher behind than before*, the *spaces* between them and the points of the quarters *great*, as are also those between the latter parts and the stifles; the haunches want the *plumpness* and *roundness* of the *full* quarter; but, so far from being either *lank* or *thin*, are *striped with bold and prominent muscles*, which, being free from the *adipose* and *cellular substance* that constitutes the *flabbiness* of those of the *full* quarter, are so distinct, even through the skin, that we can distinguish where one ends and another begins. The stifles should *project boldly forward*, and have a perceptible *irregularity* of surface. The thighs are *good*, when *long*, *thick* and *muscular;* little *hillocks*, or *rotundities*, upon them, mark the course of *muscles*, and always denote great power; the nearer the angles which they form with the parts above and below approach to *right angles*, the more force the *muscles* can exert; *ergo*, the more powerful the horse. The hock, of all other parts is in the racer of the utmost importance; it should be *broad*, *flat*, and of *large dimensions.* The propulsion of the machine is effected chiefly by those *muscles* that are attached to the point of the hock; so that the more *projecting* this is, the greater the force they can exert, simply on the principle of the lever: as a man with a long oar can row with more facility and effect than he who uses the short one, or *scull*, so can a horse with broad, projecting hocks *get over the ground* with comparative ease to himself, and pleasure to his rider. The advantages the *half-bred* horse with *good* hocks possesses as a hunter, are of no less moment than those a *good* hock confers upon the racer: his great propelling powers will enable him to *clear his raspers** with so much *grace* that the rider will find it a *difficult matter to pound him*,† and empowers him to *make such play* in the mud as will soon *sew up* his *lank-thighed* and *straight-hocked* competitors. The point of the hock cannot *stand out* too much; indeed, the greater its dimensions, altogether, the better, provided it be not *gummy*, or that its various *bony projections* and *sinewy parts* be distinctly seen or felt. If the hock is narrow, its point round, and not well defined, it is said to be *straight*, and from being very liable to *curbs*, is often called a *curby-hock:* should its point be directed inward, and the toes turned outward, the horse is *cow-hocked* or *cat-hammed.* As this is a part very liable to defect, as well as to original malformation, the nicest examination is required to detect all that may prove disadvantageous or injurious to its function, the proper performance of which is of so much importance that the propulsion of the whole machine depends chiefly upon it.

Remarks on the Purchase of a Horse.—Having selected a horse whose *make and*

* *Rasper*, a high and dangerous leap.
† Surrounded by *inaccessible raspers.*

shape please us, our next consideration is his soundness; for, though the horse-dealer may declare that he is as *sound as a bell*, we are to take the phrase as one having various meanings, and not be deterred from examining him, and narrowly, too, on that account. *Sight*, *wind*, and *limb*, must be the uppermost objects of inquiry; for nine hundred horses out of a thousand are defective in one of these particulars. First, then, examine his eyes, and do this before he comes out of the stable. Having placed him so that the light may fall upon the eyes but in one direction, see that they are of the same size, and equally full; that the haws are not prominent, and that one does not project more than the other; that the eyes are perfectly clear and transparent; and that the pupils, or *apples of the eyes*, are exactly alike in size as well as color. A sunken eye, or one over which the lids are partly closed—a projecting haw—an opaque or semi-opaque front*—a pupil dilated, or a white or clouded one—are so many omens of disease, for which we should reject the *prad* as a *cupid*,† or, what is often worse, a *blinker*, who will shy at all he meets with, and break your neck the first *poser*‡ you ride him at. Having satisfied yourself in regard to his *peepers*, have him *pulled out*, and next proceed to examine his *pipes*. If *good* and *sound*, on being nipped in the gullet, he will utter such a sound as cannot fail to strike the ear as the emission of a good *pair of bellows;* but if his *lungs are touched*, and he is a *piper*, (that is, *broken-winded*, or *having no wind at all*,) he will give vent to a *dry*, *husky*, *short* cough. Should a horse be suspected of *bad wind*, however, the purchaser cannot do better than direct his attention to the flanks, which, under such circumstances, will work either much quicker than ordinarily, or heave deeply, and with great irregularity; they will be considerably longer in contracting themselves, in order to squeeze the wind out,‖ than in falling to let it in,§ which they do, if he is a *piper*, quite suddenly. But, though not a *piper*, he may be a *whistler*, or, what is worse, a *roarer:* the first may be known by the peculiar *wheezing* he is addicted to when put to sudden or long-continued exertion; the latter, by *blowing his horn* clamorously under similar circumstances; and either may be made to display itself, by the purchaser giving him a smart cut, or even feigning to do so, with his *bit of ash*.

Thirdly, and lastly, as to the limbs. If, in passing our hand down his legs, we find any unnatural protuberance or puffiness, or if, in feeling first one leg and then the other, we discover any difference between them, disease, more or less, is present; he may not be *lame*, but he is not *clean upon his legs*. *Splents*, *windgalls*, and *ringbones* may be present without occasioning lameness, but they are all unnatural, are considered *blemishes*, and are all to be regarded with a suspicious eye, as either denoting past *hard work*, or betokening future evils. On the same principle, a horse may have a *spavin*, and be *only stiff* from it at *starting*, or he may have a *curb*, or a *thorough pin*, and be *perfectly sound;* but these are still *blemishes*, and as such detract from the intrinsic value of the animal. In explaining the advantages resulting from *good* conformation, we are *naturally* led to make remarks *en passant*, on the disadvantages from *bad;* in pursuance whereof, I have shown *why* such a structure is *bad*, a question that *necessarily* entails upon us the mention of the *disorders originating therein; i. e.* the diseases to which such parts, in consequence of being *malformed*, are *predisposed*.

INOPES.

WHY FARMERS SHOULD BE THE FRIENDS OF MECHANICS AND MANUFACTURERS.

SOME days since, in our office, we were favoured with a visit from a Scotch gentleman, as venerable for his age and virtues, as he is remarkable for sound, vigorous sense. He was, some thirty years ago, among the founders, in Philadelphia, of the Society formed for the Encouragement of Domestic Industry. He observed, that when once a farmer himself, he was anxious for the prosperity of all American mechanics and manufacturers, for *two especial reasons!*

1. Because, if they did not succeed in their own business, he was fearful they would become rivals in his, if only to make sure of bread; and 2dly, because the more prosperous they were, the better prices they could give him for what he had to sell. In a word, he wanted them to be numerous, to increase their competition; prosperous, for the sake of better prices; and near to him, that between him and them they might divide the saving in the cost of exchange. This seemed to us to be the true "common sense" view of the subject; the contrary, *un*common sense.

* Transparent cornea. † A blind one. ‡ So called from *planting* all but the *nonpareils*.
‖ Expiration. § Inspiration.

[From the New York "Wool Grower and Magazine of Agriculture and Horticulture."]

LETTERS ON THE WOOL TRADE.

By J. B. NOTT, *Esq., Secretary New York State Agricultural Society.*

TO WOOL GROWERS.—No. 1.

AGRICULTURAL ROOMS, Albany, May 25, 1846.

J. M. SHERWOOD, Esq., *President of the New York State Agricultural Society:*

MY attention has been drawn to the letter of HAMILTON GAY, Esq., of New York, addressed to the Editors of "The Journal of Commerce," and published by them on the 21st.

To the wool growers of New York, this letter is one of deep interest, and should be extensively circulated. Mr. Gay, at great personal and pecuniary sacrifices, has rendered manifest those obstacles which stand in the way of a profitable exportation of American wool. Our obligations to him are by no means trivial, for giving notoriety to facts, which show most conclusively that it is in the power of the American wool grower so to extend the market for his staple, as to give it a healthy and a reasonable activity—thus securing to present prices a steadiness and permanency which they are not otherwise likely to receive.

It has been more than intimated by the manufacturer, that he is desirous of reducing the prices for the incoming clip, some four or five cents per lb. below the prices of last year. The announcement has produced anxiety and alarm; but it would seem probable from Mr. Gay's letter, that if this is so, the exporter will cause the manufacturer ultimately to regret his selfish temerity. The causes which have chiefly marred the success of Mr. Gay's experiment, are, in his estimation, the unclean condition of the fleeces, as they come from the hand of the shepherd, and the heterogeneous character of the lots of wool, as they come from the lofts of the wool collector. There is no doubt that he is perfectly correct in his estimate, and it is equally undoubted that he might have said, that these same causes operate injuriously upon the interests of the American grower of fine wool, even in his own market; and unless removed, this department of agricultural industry will receive a blow from which it will with difficulty recover.

It is, however, too apparent, that neither the letter of Mr. Gay, nor the remarks of any one else, will have an efficient agency in correcting the faults of the unwary or the frauds of the dishonest. The evils complained of, can only be cured by making a radical change in the mode of conducting the wool business; they have sprung almost exclusively from this source, and if it is amended, a cure is certain to follow.

Nor is the change requisite environed by insuperable difficulties—it will at once be secured by a hearty, vigorous, and concerted effort, on the part of those whose interests are most deeply affected: indeed, it is more than certain that the change has already commenced. Had not inspection laws become deservedly obsolete, here would be a legitimate field for their operation. But as it is unwise to revive the absurdities of a bygone age, we must carefully inquire if we do not hold in our own hands a remedy more effective than any that can be furnished by legislative enactments.

Fleece wool is of such a nature, and the mode of transmitting to the manufacturer such, that neither the faults of the wool, nor the frauds of the shearer can be detected until it reaches the hands of the stapler. Were it furnished by each individual farmer in lots so large, that the expense and trouble of stapling each lot separately would not be too onerous, it is appa-

rent that then each lot could be traced to the particular spot from whence it came, and self-interest would soon apply an efficient corrective both to faults and frauds.

But wool is now collected in small lots from an immense multitude, in a way that it is not possible to trace each lot. The collectors for the most part are unable to discriminate properly between their different purchases, or if able, have not the wisdom or liberality to make that difference in price, which simple justice and sound policy demand.

So long as the profits on sheep husbandry were so excessive as to satisfy the most grasping cupidity, men preferred being careful and honest, to being mean and careless; but, after the profits have fallen to that level, above which no agricultural business can long continue, it is not to be wondered at, if a great and rapid deterioration takes place in the quality and condition of the article, since there is no fair and equitable discrimination made in its market value.

This brings me to a point not touched upon by Mr. Gay, but one to which it is apparent the American manufacturer of broadcloths cannot be indifferent; and which should be at any rate pressed most forcibly upon the notice of the growers of fine wool.

The present mode of purchasing wool has already had the effect to deteriorate the character of the flocks over large sections of the country. There is now an almost universal complaint, that there is no adequate discrimination in price; the evil is most seriously felt, and men are in hot haste to make changes in the character of their flocks, which they, as well as the manufacturer, will, ere long, it is to be feared, seriously lament. The changes now being rapidly made would soon be complete and irretrievable, were it not that there are some men, who, either from the magnitude of their clip—or from business connections—or peculiarity of situation—or some other cause, deal directly with the manufacturer, and not with his factor, and thus obtain prices which bear some sort of relation to the stapler's estimate of the value of the wool. If it be important to the manufacturer of fine cloth to put a stop to the degradation of our flocks, he will surely see that it can be done only by putting an end to the present manner of conducting the wool trade, and will at once lend his effective aid in bringing about a result so desirable to the prosperity of the American farmer.

As a very large proportion of the wool purchased by the wool factor is obtained from men who keep but small flocks, and who have therefore no character to sustain as flock-masters, it is very apparent from the laws of trade, that however bad may be the condition of their wool—unless it is separated in the market from that of others, who are truly flock-masters, it will more or less, according to its quantity, materially affect the price of the other, though a superior article. To show clearly that I am not mistaken in this position, allow me to direct your attention to the unwashed and filthy wool imported last year, costing under 7 cents per pound, and its influence in regulating prices. I was shown imported wool by a manufacturer, which cost him, in the condition it then was, 13 cents per lb. Yet it was equal in appearance to American wool worth 35 cents per lb. Owing to the shrinkage of this wool, however, it took 3 lbs. of it to make 1 lb. when it was worked into cloth, which therefore was equivalent to 39 or 40 cents per lb. American wool, worth 35 cents per lb. will shrink about $\frac{1}{2}$ in its preparation for cloth, and therefore cost, when in cloth, about 43 or 44 cents per lb. It is, therefore, apparent that this filthy, foreign wool, last year, had a material influence in ruling the market price of American wool of medium quality.

Tag-locks, filth and twine cannot enhance the value of any portion of the wool in market; nor ought a system to be longer tolerated that makes little

or no difference in the price of wool thus basely contaminated, and wool wholly free from censurable impurities. Look at the consequence: the price obtained may adequately remunerate the grower of the one, while to the grower of the other it is utterly ruinous.

The one keeps his small flock poorly and cheaply by the road-side, or on the refuse of his farm, while the flock of the other consumes the entire or chief product of the farm, and the wool he yields is the only or main crop that its owner carries to market. To each therefore the same price will not bring the same returns. The one may and will probably continue to raise wool in his small way, without any material change in its condition, whatever may be the result of any effort to alter the absurd practices of the wool trade. But the other cannot and will not long persevere as a wool grower, unless there is an alteration: and if the present sheep-walks are in consequence turned into ploughed fields, the ordinary farmer will, in his turn, experience the ruinous consequences of neglecting studiously to foster such modes of marketing wool as will secure to each shepherd an exact recompense for his skill and care. It may be possible for the agricultural products of the country to sink still lower in value than they now are. Perhaps there is margin enough for a great depreciation in prices; but it will, sooner or later, become necessary for the manufacturer to inquire whether his interests will be promoted or prejudiced, by having the *farmers* of the United States become merely peasants. May he not so depreciate the value of wool that he will ultimately injure himself?

Until the letter of Mr. Gay, nothing has ever before been said, that I am aware of, about the necessity of sorting fleeces for market. According to Mr. Gay, wool destined to European markets must be sorted, else the fullest advantage will not be realized from the venture. Nor is it less certain, that an unnecessary loss is annually submitted to, by the neglect, or rather by the impossibility, under the present system, of doing the same thing with fleeces destined for home consumption. The necessity of sorting in the one, springs out of the division of manufacturing labour. The division of labour, it is true, is not carried as far with us as with foreigners; it nevertheless exists to a great extent—is daily becoming more perfect, and from the necessity of the case, must ultimately be as complete here as elsewhere. But even as things now are, it is not difficult to show that the sorting of fleece wool is requisite to prevent an otherwise unnecessary loss to the wool growers.

One factory that I can name, values a certain description of wool only at 35 cents per lb., because it is unsuited to their style of goods; while the very same wool is valued, in another factory, at 40 cents per lb. for the opposite reason.

Here is the evidence, in one case at least, that in this country, as in England, the manufacturer undervalues the wool brought to his factory for sale.

Again, the mousseline de laine manufacturers, in some instances, use wool of precisely the same market value with the satinet maker. But the style of the wool is different; the staple of the one being longer than that of the other.

The interest of both would be promoted by sorting wool, not only as to its quality and the condition of the fleece, but also, as to the style, and undoubtedly both would be willing to pay a trifle more per lb.—a trifle, it is true—but success often depends upon trifles.

The staplers of satinet factories and other manufacturers of coarse fabrics, frequently collect large stocks of wool, of a quality used only by the manufacturers of broadcloths. Yet for this superior wool no more has been paid by the satinet makers than for that of inferior quality, which is perfectly well adapted to his purpose. I have before me the evidence of one case,

where an advance of 20 cents per pound was obtained by a manufacturer of satinets, for wool of a quality too good for his purpose. So also, the makers of mousseline de laines purchase large quantities of wool in order to select from it only that which has sufficient length of staple to suit their purpose; the residue is disposed of to others. A company can be named, who annually use 200,000 lbs. of mousseline de laine wool, and yet buy 350,000 lbs. to select from.

Those manufacturers that require the best and the finest wool for their goods, are compelled, under the existing practice, to buy large quantities of wool unsuited to their purpose. An establishment can be named that has 150,000 lbs. of wool now on hand, thus obtained, and which they will gladly return to the farmer at cost. The Middlesex Company use annually one million pounds of wool; what then must be the amount of surplus wool purchased by them?

A Vermont manufacturer of broadcloths purchased a lot of wool in Dutchess county; among it was some wool brought from his own immediate neighbours, and which he could have purchased before it left home if it had suited his style of goods, without paying a price for it enhanced by the profits of two factors, through whose hands it had passed, and the expense of the journey to Dutchess county and back. The manufacturer must be paid for this useless employment of his capital. He is paid, even though unwittingly; he is paid by the flock-masters.

I have collected numerous facts to sustain the position I have taken, but one has recently come under my notice so conclusive, that I select it in preference to others for this purpose. A lot of wool, amounting to several thousand pounds, was put up in the manner complained of, in 1844, but was not sold till 1845, and was then sold without being sorted. The clip of the same flock for 1845 was put up as it ought to be, and was sold—but sorted; a few hundred pounds of the coarser fleeces, amounting to a tenth of the quantity put up in 1844, being separated. Both lots were cleansed by the same manufacturer, in all respects under the same circumstances, except as I have mentioned, and yet the last lot brought 10 cents per lb. more than the former. Both lots were stapled and cleansed, and the real value of each determined by the manufacturer, under circumstances which leave no doubt that the truth was fully and fairly ascertained and stated.

Those who take short-sighted views of things, may not see fully and clearly the injurious consequences of the evil here pointed out. They may say that under the present system, quite as much if not more wool is purchased by the manufacturer than would be purchased under any other system; and if one class of manufacturers accumulate large stocks of wool that they do not want, they can sell them to others who do. All this is undeniable. But the manufacturers no more desire to be wool merchants, than they desire to be wool growers, and thus acquire themselves the united profits of the farmer, the merchant, and the manufacturer.

The history of commerce shows that, with few exceptions, this jumble of different pursuits is fatal to prosperity. If the manufacturer, by the force of circumstances, is nevertheless compelled to some extent to pursue this course, he will not transfer an accumulation of, to him, useless wool, to a brother manufacturer, without a profit, and whatever that profit may be, it is so much abstracted from the profit of the wool grower.

Again: whatever retards the prosperity of the woollen factories, abates measurably the profits of the flock-master, and among the various hinderances to the growth and extension of this description of manufactures, none has been more potent in its baneful influences than the known and acknowledged fact that an enormous amount of capital is requisite to insure

success. I hope to be able to show, by and by, that it is for the interest of the wool-grower to do all in his power to lessen this evil, and bring the cotton and the woollen manufacturer more nearly to a level.

The 150,000 lbs. of wool referred to has cost that Company not less than $52,500, a very nice sum to lay perfectly idle for more than a year. The bare mention of the fact will convince any one that this Company will readily pay more than it now does for the description of wool it actually wants, if it can be saved an outlay so enormous, and at the same time so unnecessary.

I remain yours, &c. J. B. Nott.

[From the Lowell Journal.]

STATISTICS OF MANUFACTURES, &c.

It appears from recent statistics, compiled with great care from authentic sources, that the whole number of manufacturing corporations in this city, including the Bleachery and Machine Shop, is twelve, whose aggregate capital stock amounts to TWELVE MILLIONS, one hundred and ten thousand dollars. The whole number of mills is forty-eight, which give employment to 7644 females and 3629 males, or total number of hands employed, 11,273. The whole number of yards manufactured per week, is 1,732,827—viz.: 1,704,996 of cotton, 21,291 of woollen, 6500 carpets, and 40 rugs. The amount of cotton consumed is 559,000 pounds per week, and of wool 46,000 pounds. The number of yards printed is 380,000, and of dyed 2,015,000. The different companies use 25,100 tons of anthracite coal per annum, 36,303 bushels of charcoal, 2790 cords of wood. They also consume 70,510 gallons of sperm oil, and 35,000 of lard, 1,000,000 lbs. of starch, and 765 barrels of flour. The buildings are warmed by steam and furnace.

Other manufactures are produced in the city than those specified above, of a value of $1,500,000, employing a capital of $400,000, and about 1500 hands.

The average wages of females, clear of board, per week, is $2·00; average wages of males, clear of board, per day, $0·80; medium produce of a loom, No. 14 yarn, yards per day, 45; medium produce of a loom, No. 30 yarn, yards per day, 33; average per spindle, yards per day, $1\frac{1}{8}$.

The Middlesex Company make use annually of 6,000,000 teasels, 1,716,000 lbs. fine wool, 80,000 lbs. glue, $60,000 worth dye-stuffs, and $17,000 worth of soap. They also own the Wamesit Carpet Mill, on the Concord river, where are consumed annually, 93,600 lbs. coarse wool, 36,400 lbs. of worsted yarn, producing 91,000 yards ingrain carpeting.

The Lowell Machine Shop, included among the above mills, can furnish machinery complete for a mill of 6000 spindles, in three months, and a mill can be built in the same time.

The several manufacturing companies have established a hospital for the convenience and comfort of persons employed by them respectively when sick, which is under the superintendence of one of the best surgeons and physicians.

There are two institutions for savings—the "Lowell" and the "City." The "Lowell" had on deposit, in September, 1848, from 5066 depositors, $852,280. The "City" has been in operation only since March, 1848, and had on deposit, January 1, 1849, from 258 depositors, $27,717. The operatives in the mills are the principal depositors in the above banks.

The population of the city at this time is estimated at 35,000. Nineteen years ago it was little rising 3500.

CHEMISTRY IN ITS RELATION TO AGRICULTURE.

Of all sciences, chemistry is that which has the nearest relation to agriculture, and lends to it the greatest aid. It is a science that points out to us means by which we may add to the fertility of the ground through the medium of foreign substances applied to it; but, in the case of chemistry, as in that of all other sciences, a certain degree of caution is necessary in carrying into practice the rules laid down by the theorist, when in his laboratory. Chemistry enables us at once to test the real value of any given substance, without the uncertainty and loss of time attendant on a trial; and when it is considered how much time must have been lost, how unsatisfactory the result must repeatedly have been, when no such knowledge existed to certify the progress of discovery, the value of this science may in some measure be estimated. It is certain that the principles on which vegetables are nourished, depend altogether upon chemistry; and agriculture, in its modern and improved state, has led with considerable precision to a knowledge of those laws of vegetation by which we are enabled to ameliorate the land, and to increase the quantity as well as improve the quality of its productions. The farmer who applies a peculiar species of manure, which has been found beneficial to his ground, being himself ignorant of chemistry, only follows the practice of his predecessors or neighbours; but while he sneers at the theorist who would direct his attention to the studies of the first principles of his art, both he and those whom he follows were probably originally indebted for that practice to the observations of men of science. No one who is at all conversant with the subject of manure can be ignorant that, notwithstanding the management of intelligent husbandmen, a great want of knowledge prevails among the common run of farmers regarding the best modes of its preparation and application. I think if we were to pay a little more attention to the nature and properties of manure before we apply it to the soil, we may in that way sometimes reap great benefit. I think these things ought to be more seriously considered, not only for the benefit we may ourselves derive from it, but also the community. I know not that more cogent arguments for the union of chemistry with agriculture can be adduced than already exist in the stimulus all parties possess for advancing their individual interests; but of this we may feel assured, that as the end and object of all knowledge in connection with this subject is to increase the produce of the earth, so those who will not avail themselves of the assistance chemistry affords will be left behind in the struggle which is going on; and further, those who do rely on the science for an elucidation of the hitherto mysterious operations of Nature, will not only derive a direct and immediate benefit from the application of chemistry to agriculture, but they will also proceed with less difficulty, from being assured that the laws of Nature are uniform in their operations, and that a certain cause will always induce a certain result. Without a fair trial being given to the opinions of the one or the power of the other, the hints thrown out by the scientific are often overpowered and put down by that concentrated mass of ignorance and prejudice through which the light of science can rarely penetrate. Every year shows us more and more clearly that we must find a surer way of obtaining good crops than our forefathers; we have the foreign grower to contend with, and must now look to science, not leave it to the next generation of farmers for the aid which practice alone cannot afford us. I do not mean to say a farmer must be a professed chemist and master of analysis; on the contrary, I think it would be useless for him to trouble himself with the sixty-two elementary or simple bodies which the numberless forms of

matter, of which the crust of the globe is composed, are capable of being resolved into; but it is necessary every farmer should have a certain amount of information on scientific subjects, more especially with those that point out to him the composition of the various plants he cultivates, and of the manures he carries on his land.* Liebig says, in his excellent work on "Chemistry in its Application to Agriculture and Physiology," "Now that the conditions which render the soil productive and capable of affording support to plants are ascertained, it cannot well be denied, that from chemistry alone further progress in agriculture is to be expected."

G. S., A YOUNG FARMER.

THE LUMBER TRADE.

Maine Lumber.—The Kennebec Journal denies a rumour spread abroad, that an immense quantity of timber has been cut in the forests of Maine during the past year. It adds:

The winter has been good for lumbering operations, but the scarcity of money and the diminished demand for lumber have curtailed the work. It is believed that the amount cut will be one-third less than last year, and it is uncertain whether even this will get down to the mills, though probably there will be as much as can be sold. The demand for lumber depends mainly upon the prosperity of the manufacturers of New England. But little, comparatively, of the lumber of Maine finds a market beyond the limits of New England.

The power to consume cloth has *diminished* under the new system which was to emancipate labour and capital from the taxation of the protective system. Therewith, there has been *a diminution* in the power to consume lumber, and the farmer is no longer enabled, with profit to himself, to clear and cultivate the lands on which it grows. The power to consume coal has *diminished* as the new system has come gradually into action, and the farmer has ceased to have a demand for the spare labour of himself, his sons, his wagons, and his horses, for the service of the miners, and for the hauling of stone and lumber for building houses for those employed in working them. The power to consume iron has *diminished*, and the farmer sells no stone from his quarries for the building of furnaces. The men who worked in the furnaces and mines are flying to the West, there to become producers of food, because the farmers and planters of the country have determined to depend upon the small and uncertain market afforded by the "great grain markets of the world," instead of the immense, and then rapidly growing, and *certain* market at home. It is time that farmers and planters should open their eyes to the fact that it is population that makes land valuable, because population brings consumers to their sides—and that depopulation diminishes the value of both labour and land, because with every step in its progress, men are compelled to waste more labour and manure in the work of transportation and exchange. When they shall do so, they will arrive at the conclusion that protection is emphatically a farmer's and planter's measure, and they will then be seen uniting in the demand for the adoption of a system of policy that will permit the consumer of food to take his place by the side of the producer of food.

* Concurring in this opinion, it is for that reason that we are publishing elementary works, by means of which every farmer and every farmer's son may acquire such information. Every cultivator of the soil in the Union, who can raise "a quarter," and who has a son, or expects ever to have one, ought to hasten to buy "*The Elements of Agriculture*," which Mr. RANDALL, formerly Superintendent of the Public Schools in New York, says is decidedly the best work for its purpose, as an elementary school-book, that has ever fallen under his observation. We can send it by mail to any one, the postage being only four or five cents—or we will send it without charge to any one sending $3 for one subscriber, $5 for two, or $10 for five.

IRON ORE.

Reading Iron Ore.—The iron beds in the vicinity of our city, and indeed those within our limits have, within the last year or two, received a large share of attention from those engaged in the business, and their labours seem to have met with great encouragement from the value of the ore which their excavations have discovered. On Penn's Mount, a mountain known to contain vast quantities of the ore, the most extensive and valuable veins of various kinds of iron have been discovered. For many years these rich deposits were abandoned, and the openings had been entirely neglected, either for the want of capital or the absence of a proper spirit of enterprise, until they attracted the attention of our enterprising fellow-townsman, George W. Oakeley, Esq., who appreciated their value, and in the face of the most discouraging barriers, sufficient to retard the progress of one less determined, he went to work with his men, and by personal effort and skill, succeeded in drawing from the bowels of the mountain, ore as rich and as valuable as ever was found in the placers of the Sacramento.—*Reading (Pa.) Gazette.*

From one extremity of this country to the other, iron ore abounds, requiring only labour to give it value. Labour abounds, and men everywhere are seen wasting more time than would pay thrice over for all the iron they consume. The labourer employed in extracting the ore and converting it into iron, requires food, which so abounds that in many parts of the country the waste is more than would pay for all the iron that is consumed, and "the great grain markets of the world" are so choked with the products of Russia and Poland, Egypt and Sicily, that there exists no hope of any diminution of our great surplus: and with all this, the newspapers of the day show us that we are daily importing immense quantities of British and Russian, Polish and Sicilian, food in the form of iron.

Why is it so? Our readers will find the explanation in the paragraph given above. The preparation for making iron cheaply involves large expenditure, and all fear to engage in it, because there is, and under the existing system there can be, no certainty. Two years since, iron was high everywhere, and men were induced to build furnaces and rolling-mills. Now, it is everywhere low, and the builders of furnaces and rolling-mills are ruined. So has it been for fifty years. The system of England is unsound and unsteady, and it ruins all who are in close connection with her. Ireland, Nova Scotia, New Brunswick, Canada, and India, have iron ore in abundance, but they can never have furnaces while they continue to be subject to the laws of England. Give them freedom, and their first step will be seen to be an effort to bring the consumer of food to the side of the producer of food, and then land and labour will become valuable, and the farmer will grow rich.

Analysis of the Speech of Mr. D'Israeli.—The speech made by Mr. D'Israeli, in the House of Commons, on proposing his resolutions relative to the burdens on agriculture, was sent for analysis to the laboratory of that eminent chemist, *Mr. Punch.* It appeared as a mass of watery vapour, nearly equal in volume to a small duodecimo, but which was reduced by condensation into a much smaller space. On applying the test of Mr. Joseph Hume, there was thrown down a large precipitate of imaginary facts and figures. There remained in solution a tissue of misrepresentations, combined with a great amount of clap-trap and a considerable portion of fatty matter, that on examination proved to be gammon; from which substances the liquid was separated by distillation. The product which came over was chiefly aqueous; containing, however, traces of spirit, and a minute quantity of essential principle—which consisted in easing the landlords of taxation at the expense of the community, and leaving the much-enduring tenant farmers worse off than they are.—*Punch.*

[Entered according to Act of Congress, in the year 1849, by JOHN S. SKINNER & SON, in the Clerk's Office of the District Court of the Eastern District of Pennsylvania.]

THE AGRICULTURAL SCHOOL-BOOK.

THE TRUE GRASSES, OR GRAMINEÆ.

BY DR. DARLINGTON.

THE following may be said to be based upon and made up of an "ESSAY ON THE TRUE GRASSES," by DR. DARLINGTON, of West Chester, Pa., thrown here into catechetical form, for the better use of schools, corresponding, in that respect, with the foregoing "*Catechism of Agricultural Chemistry.*"

This is one among many of the obligations conferred on the public, in this way, by a gentleman whose pursuit of knowledge is evidently prompted by the twofold motive of love of knowledge for its own sake, and for the uses to which it may be applied for the benefit of his fellow-men. We are happy in the opportunity of paying even this public tribute to his eminent worth and abilities.

It is evident that these lessons can be rendered much more practical and interesting if the teacher will take the trouble to illustrate them by exhibiting specimens of the grasses and grains described. There are many questions, too, independent of those at the end of each lesson, that should be put by the teacher, in order to assure himself that the subject is thoroughly understood.—*Editors P. L. & A.*

FIRST LESSON.

1. The term grass is generally used in a vague sense, to designate every kind of herbage found in our meadows and pastures: hence, we often hear people speak of clover, lucerne, and other plants, which have no botanical affinity whatever with the true grasses, as though they really belonged to that important tribe of vegetables. But such is not the language of naturalists; and ought not to be of any well-informed person. An accurate knowledge of objects can neither be acquired nor communicated without precision in the use of terms.

2. Whenever we meet with a plant having a round, jointed stem, with the joints solid and the intervening portions hollow—or, in a few instances, filled with a pith-like substance—the leaves alternate, one originating at each joint, embracing the stems with its base, and forming a sheath which is slit on one side down to its origin, and the flowers protected by those peculiar envelopes, known by the name of chaff, we may take it for granted we have before us a true grass. Brief and simple as is this definition, it will be found to contain the most obvious characteristics of the tribe, sufficient to distinguish it from all others.

3. The cuticle or skin of the grasses (for they have no bark, properly so called) contains a considerable portion of *silex*—as is shown by its vitrification, when stacks, or other dense masses of unthreshed grain are burnt. A sort of glass is produced from this silex, which preserves the form of the plant, even to its minutest parts.

4. The nerves or *veins* in the leaves of this family are all nearly parallel—in consequence of which those appendages (*i. e.* the leaves) are entire, generally narrow, elongated, and more or less linear in their form.

5. The flowers are mostly small, disposed in little clusters or spikelets, and these spikelets are variously arranged, in spikes, racemes, or loose panicles. Each spikelet—consisting sometimes of one, but more commonly of two, three, or many florets—is usually embraced, or supported at the base,

by two chaffy pieces, called glumes; and each *floret* is immediately protected by two somewhat similar chaffy coverings, which, for the sake of distinction, are denominated *paleæ*. These chaffy coverings of the flowers and seeds of the grasses are wholly unlike the delicate and showy floral envelopes of most other plants—and seem to be, in fact, the mere stunted vestiges of abortive leaves—or rather of their sheaths—closely crowded together. Hence we find them, like the leaves, constantly alternate: for, although approximated in pairs, they are never exactly opposite, or originating in the same place, as we see to be the case with the sepals and petals of other tribes. The number of stamens* is usually *three*—rarely *six*, or some multiple of three—and occasionally, from abortion, some intermediate, or smaller number.

6. Each fertile flower produces a ***single seed***, the chief bulk of which is called albumen, and is that nutritious portion of our cultivated grains from which the miller prepares *flour*. The *embryo*, or living rudiment of the future plant, is comparatively a mere speck, or minute point in the seeds of the grasses—snugly situated, on the outer side, near the base of the albumen, where it lies dormant, until the concurring causes of vegetation (namely, warmth, moisture, and oxygen) excite it into active life. This embryo—which is in fact an entire plant in miniature—may be distinctly and satisfactorily observed in a grain of wheat or Indian corn—especially at the moment of sprouting or incipient growth—when it will be found that the principal mass of the grain consists of the apparently inorganic matter already mentioned by the name of albumen.

7. Having thus hastily glanced at some of the more striking features of the extensive tribe, technically called *grasses*, and the characters by which they are distinguished from other plants, it is hoped that the student will have no difficulty hereafter in recognising any member of that family. He knows, indeed, that "red-top," "timothy," and "fox-tail" are *grasses*, and he may perhaps be aware that our cultivated oats, barley, wheat, and rye, and even rice, belong to the same category. But the fact may not be equally familiar to every one that our Indian corn and broom-corn, the sugar-cane and the bamboo, are also *genuine and true grasses*. Much as these last-mentioned plants may seem to differ from the multitude of common grasses, the disciplined eye of the botanist perceives at a glance that they all belong to the same family; and indeed so eminently *natural* is the whole tribe—*i. e.* so strong is the general resemblance in the characters and habits of its members—that superficial observers, finding it so much easier to adopt than to verify the crude notions of the vulgar, have actually supposed several species to be continually and reciprocally changing into each other! It is to be hoped, however, that our ingenious youths will yet learn to discriminate between truth and error, in the objects around them, and not be content "to wander among the productions of nature with little more perception or enjoyment of her charms than a cow on a common, or a goose on a green."

QUESTIONS.

1. Is the term grass often misapplied?
2. How are the true grasses recognised?
3. Does the skin of the grasses contain much silex?
4. Describe the leaves.
5. Describe the flowers.
6. What is the chief bulk of the seeds composed of?
7. Do the different species of grass change from one kind to another?

* *Note.*—The teacher will here explain what the stamens are.

SECOND LESSON.

THE TRUE GRASSES. (*Continued.*)

1. The whole number of flowering plants already known to the botanists has been estimated at forty thousand species, of which it is supposed the grasses constitute one-twentieth part; but if we take into account the immense number of individuals of many species, the proportion of grasses to vegetation in general will be greatly increased.

2. The known grasses of the Middle and Northern States, native, naturalized, and cultivated, amount to near one hundred species, or *one-tenth* of the whole number of flowering plants inhabiting the same territory. A large portion, indeed, of this vast family is not known to possess any properties which man has yet been able to convert to his own immediate advantage; but it becomes us to be cautious how we decide upon the value of objects from the imperfect views of their *utility* afforded by our limited knowledge. Many created beings which appear to us as nuisances may be important agents for good in the economy of nature. The most worthless grasses—or the veriest *weeds* that annoy the husbandman—*may* be the instruments of a wise Providence for collecting fertilizing principles from every falling shower, or passing breeze, and imparting them in turn to the soil on which they are finally decomposed.

3. With respect to *locality* or peculiar places of growth affected by this numerous tribe, there is but little to remark. We find grasses growing on dry land and in water; but none that are properly *marine* plants. They occur in every kind of soil, both in society with others, and alone; sometimes occupying considerable districts, to the almost entire exclusion of other forms of vegetation, and thus forming the beautiful *turf*, so much admired in lawns and meadows. *Sand* appears to be less favourable to their growth; but even this produces species which seem almost peculiar to itself.

4. The *diffusion* of this family has almost no other limits than those of the whole vegetable kingdom. Grasses occur under the equator, and are among the few plants to be met with in the frozen regions of Spitzbergen. On the mountains of the south of Europe, and on the Andes, in our own hemisphere, they ascend almost to the line of perpetual snow.

5. The most striking differences between tropical and extra-tropical grasses are the following:

1st. The *tropical* grasses acquire a much greater *height*, and occasionally assume the appearance of trees. Some species of bamboo are from fifty to sixty feet high.

2d. The leaves of the tropical grasses are broader and approach more in form to those of other families of plants.

3d. The *flowers* in tropical grasses are more frequently imperfect or diclinous—*i. e.* the stamens and pistils are oftener found in distinct and separate envelopes: they are also usually softer, more downy and elegant—as may be seen in the sugar-cane, and others.

6. In respect to the predominating kinds of grain or grasses, the earth may be divided into *five* grand belts or kingdoms. Beginning at the South, rice predominates; then maize, or Indian corn; then wheat; then rye; and lastly, barley and oats. Maize, or Indian corn, has the greatest range of temperature; but rice may be said to support the greatest number of the human race.

7. With reference to the properties and uses of this comparatively humble tribe of plants, it may be observed that it probably contributes, directly and indirectly, more largely to the sustenance and comfort of the human family

than any if not all of the other groups of the vegetable creation. Those numerous species which are regarded as mere weeds—which even the browsing herds neglect and trample under foot—may yet, as has been intimated, be operative in gradually fertilizing the soil. Some have been found of great value, simply in fixing and keeping together the blowing sands of the sea-coast, and the loose earth of railroad and canal embankments, by their creeping suckers and tough entangled roots. Among these, the *Arundo arenaria* (L.) and the *Cynodon dactylon* (Pers.) are the most remarkable. The *culms* or stems of the grasses have been put in requisition for various economical and even ornamental purposes. The branches of the panicle at the summit of our well-known broom-corn, are manufactured into brooms. The culms of rye afford a good material for roof, and are much employed in some parts of the country in thatching barns, out-houses, and stacks. The Chinese manufacture a delicate paper from the rice-plant; and in our own country a coarse but very useful paper is made of oat-straw and even corn-husks. In the country of the bamboo, the culms of that stately grass furnish spars for the equipment of sail-boats, and materials for the manufacture of furniture. Large quantities of paper are also made in China from the bamboo. The well-known Leghorn bonnets, so highly prized by the ladies, are manufactured from the straw of a delicate kind of wheat; and in our own country many beautiful imitations of Leghorn hats and bonnets have been made from the slender culms of the grasses—particularly the meadow or green grass—*Poa pratensis*, (L.)

QUESTIONS.

1. What is the estimated number of flowering plants known to botanists, and what proportion of them belongs to the grasses?
2. What is the number of grasses in the Middle and Northern States?
3. What of the locality of the grasses?
4. Are the grasses found diffused throughout the globe?
5. What are the most striking differences between the tropical and extra-tropical grasses?
6. In respect to the predominating kinds of grass, how may the world be divided?
7. What of the properties and uses of the grasses?

THIRD LESSON.

THE TRUE GRASSES. (*Continued.*)

1. In an *agricultural* point of view, the superior value of the grasses, as materials for pasture and hay, is owing to the large quantity of saccharine matter with which they abound about the time of flowering, and which is the source of that rich, sweet odour observable in well-preserved hay.

2. This saccharine matter which pervades the whole plant before flowering, and is most perfectly elaborated at that epoch, is designed to be ultimately concentrated and deposited in the seeds, chiefly in the form of *farina;* and hence we find the herbage comparatively of little value after the fruit is fully matured. The skilful agriculturist, therefore, when he wishes to have good *hay*, cuts the grass at the moment when the nutritious juices are most perfect, and while they are diffused throughout the plant. But when his main object is the *seed*—as in our cultivated grains—he of course postpones his harvest until the career of vegetation is finished.

3. It is needless to enlarge on the importance of the herbage of the grasses in supplying the food of our domestic animals, and indirectly the animal portion of our own food. We will, however, mention those species which are deemed of chief value in our meadows and pastures, naming them in what is considered the order of their excellence. 1. The meadow or green grass, erroneously called blue grass, in Kentucky, (*Poa pratensis*,

L.) 2. Timothy, or the "herd's grass" of the Northern States, (*Phleum pratense.*) 3. Orchard-grass, (*Dactylis glomerata*, L.) 4. Meadow fescue (*Festuca pratensis*, L.) 5. Blue-grass, (*Poa compressa*, L.) 6. Ray-grass, (*Lolium perenne*, L.) 7. Herd's grass of Pennsylvania, often called "red-top," the "bent grass" of the English, (*Agrostis vulgaris*, L.) And, 8. Sweet-scented vernal grass, (*Anthoxanthum odoratum*, L.) There are a few other grasses, native or partially naturalized, to be found on our farms, and which are more or less eaten by cattle when the better ones are wanting, but they are of comparatively little value, and good farmers are always desirous to supersede them as soon as possible, by some of those above-named.

4. It is remarkable that all the grasses here enumerated are believed to have been introduced into our country. They are all more or less extensively naturalized; but some of them require to be regularly sown to produce a full crop—and are therefore known as artificial grasses. Those generally cultivated here are the timothy and orchard-grass—and occasionally we see the ray and herd's grass, or red-top—though these last are not so much esteemed. The others are completely naturalized; and when the soil is either originally fertile, or adequately improved, the best of them —viz.: the meadow-grass and the fescue—soon appear spontaneously in our pastures, and supersede the artificial ones. Now and then we hear of attempts to introduce new grasses to the notice of our agriculturists—accompanied by exaggerated statements of their value—such as the taller oat-grass, (*Avena elatior*, L.) and sometimes called "grass of the Andes:" and a few years since, one of our coarse indigenous grasses, called "Sesame," or "gama grass," (*Tripsacum dactyloides,*) was so extravagantly lauded in the journals, that many lovers of novelties were induced to try the experiment of cultivating it, in place of the old approved plants, but the experiment resulted in a total failure. It is indeed exceedingly doubtful whether any other grasses are so well adapted to our climate and our wants as those old and long tried acquaintances of our farmers, which have been enumerated.

5. We have thus endeavoured to give some idea of the uses to which the roots, stems, and general herbage of the grasses are or may be appropriated, in the arts, in domestic and rural economy; but it is from the seeds of the grass tribe—with one exception—that we derive the most eminent and immediate advantages. To them we are indebted for what has been emphatically called "the staff of life." The chief bulk of those seeds being made up of farinaceous matter—which, as has been stated, is always innocent and nutritious—they are consequently well adapted to the sustenance of man. They not only supply us with bread, but with all the countless variety of dishes which ingenuity has prepared, both from the flour, and the unground grain; and if but few species are commonly employed for that purpose, it is because the large size of their seeds, compared with other grasses, renders them more eligible as objects of culture. There is but a solitary instance alleged of the unwholesomeness of the seeds in the entire family of the grasses—viz.: those of the darnel, (*Lolium temulentum,*) a common weed in many parts of Europe, but scarcely known in the United States: and even in this case the deleterious effects are probably much exaggerated. It is only when the seeds are damaged or diseased that they become injurious to health—as, when putrefaction has commenced—or when that peculiar disease and enlargement of the grain occurs, which is known by the name of *Ergot.*

6. This kind of diseased grain, (the effect, it is believed, of a parasitic fungus,) has been found to exert a powerful influence on the animal system; and hence, instead of being a nutriment, it may become either a

poison or a *medicine*, according to the quantity taken or the manner in which it is employed. It is true that human ingenuity has extracted a potent medical agent, in the form of alcohol, from the fermented seeds and juices of the gramineæ—and it is equally true, that man has converted that *extreme medium* into his daily beverage; but this is only a signal instance of his depravity, in perverting the blessings bestowed upon him, and argues nothing against the intrinsic value of the materials abused. It merely illustrates the ancient truth: "*corruptio optimi pessima*,"—that the prostitution of the best things produces the vilest results.

7. In some regions, where our common cultivated grains do not succeed well, either from the character of the climate or the inhabitants, other grasses are employed as substitutes. The seeds of a late aquatic grass, (*Glyceria luitans*,)—which grows spontaneously here as well as in the old world—are used in the north of Europe, as an article of food, under the name of manna seeds, or *manne de Prusse*. In some parts of Asia, Africa, and Europe, food is prepared from the seeds of the several grasses which comprise the different kinds of millet, and a few others; but they are all inferior in value to the poorest of the *cereals* or cultivated grains. The plant called "millet" in this country, (*Setaria germanica*,) is valued chiefly for its herbage; and even that does not seem to command the attention of many farmers. The true millet—unknown in our agriculture—is believed to be a species of panicum; but there are other kinds nearly allied to our broom-corn, known by the names of Indian millet, Guinea corn, chocolate corn, &c. These have been cultivated here occasionally, but rather as articles of curiosity than of agricultural importance. Our common broom-corn (*Sorghum saccharatum*) is cultivated here exclusively for the uses indicated by its popular *name*, as already noticed; though the stem contains much saccharine matter, and it is sometimes raised in Italy for the purpose of making sugar.

QUESTIONS.

1. To what is the agricultural value of grass to be chiefly attributed?
2. What is said of the saccharine matter with reference to cutting hay?
3. Name the more valuable grasses.
4. What is remarked of these grasses?
5. What is said of the seeds of the grasses and their uses?
6. What is ergot?
7. Are any other than the cultivated grains ever used for food?

FOURTH LESSON.

THE TRUE GRASSES. (*Continued.*)

1. The least valuable, perhaps, of our cereals—or those grasses which are cultivated here for the sake of their seeds—is the common *oats* (*Avena sativa.*) This grain is lighter and less perfect with us than it is in the north of Europe, and it is almost entirely appropriated here to the feeding of domestic animals; but in less favoured climes—as already remarked—it contributes largely and directly to the sustenance of man.

2. Ascending in the scale of value, we next find barley, (*Hordeum vulgare*,) a grain which in some regions is extensively used for *bread*, and more or less as food for horses, and other stock; but in our own country, it is almost exclusively employed in the manufacture of a rich potation known to us all by the names of beer, ale, and porter. The entire crops produced in the Middle and Northern States are destined for the *breweries*—a comparatively small portion being used in the distilleries.

3. The grain next superior in importance—being used to a considerable extent in making bread—is rye, (*Secale cereale.*) In most parts of the

country, from the force of custom or prejudice, and the greater abundance of wheat, we are in the habit of undervaluing the bread made from this grain; but in many districts, where the soil is better adapted to the plant, rye is very generally used and highly esteemed. It is also employed to a most mischievous extent in the production of the ardent spirit called *whisky*. So great is the amount of ardent spirit procured from this grain, and so tremendous the abuse resulting from the practice, that it may be doubted on the whole whether *rye* does not contribute more largely to the destruction than to the sustenance of human life. Certain it is, that by the conversion of its wholesome farina into an intoxicating draught, it is made a potent instrument of physical and moral evil—a most prolific source of disease, misery, and crime. All these mischiefs, however, arise from the misapplication and abuse of a positive good, for which man himself must be held accountable, and must expect the penalties inseparable from folly and wickedness.

4. The next most valuable plant among the *cereals* is perhaps our Indian corn, (*Zea mays*,) and, indeed, in the districts most favourable to its culture, it may be said to rival wheat itself in importance. Those who are not in the habit of regarding the vegetable kingdom with a botanical eye, may possibly be surprised to hear this plant enumerated among the *grasses:* yet, if they will advert to the definition already given, they will find the Indian corn to be a genuine member of the gramineous tribe. It presents, indeed, one of the few instances in which the stem is solid with pith, instead of being hollow between the joints; but in every essential feature it will be found on examination to be a true and undoubted *grass*. The same remark applies to the broom-corn, the sugar-cane, and some others in which the culm is filled with pith. In our country, it would be wholly superfluous to dwell on the excellence and manifold uses of this universal favourite. Suffice it to say that while it is the most productive of our cultivated grains, every portion of the plant has its value in rural and domestic economy. The large pithy culm, about the time of flowering, is replete with a rich saccharine juice, from which no doubt a considerable quantity of sugar might be extracted. The entire herbage is therefore highly esteemed as a nutritious food for cattle. The *ears* or spikes of fruit afford a choice treat to the epicure, even before they arrive at maturity, and when fully ripe, yield copious nourishment in many forms, both for man and beast, while the very *receptacles* of the seeds—long considered as mere refuse—may be either ground with the grain as food for stock, or reserved as a convenient auxiliary fuel in lighting up coal fires. In the north generally the farina of Indian-corn is not extensively used by itself in making *bread*, probably for want of skill and usage; but on the southern side of Mason and Dixon's line, corn-bread is admirably prepared, and quite as popular as any other kind. The inhabitants of the West Indies also derive a large portion of their subsistence from our crops of Indian corn. It must be added, moreover, that a vast amount of this grain, in conjunction with rye, is converted by the distilleries into alcoholic poison, and its wholesome properties transmuted into the pestilent ministers of a depraved appetite.

QUESTIONS.

1. What is said of the common oat?
2. What of barley?
3. What of rye and its uses?
4. What is said of Indian corn and its various uses?

FIFTH LESSON.

THE TRUE GRASSES. (*Continued.*)

1. There are two other grain-bearing grasses yet to be noticed, each of which is so eminently valuable to the human race, that it is not easy to say which is entitled to the highest position in the scale of importance. We refer to wheat (*Triticum sativum*) and rice (*Oryza sativa.*) In point of *intrinsic* value, there is no doubt that wheat may justly claim the precedence; but as rice is believed to afford sustenance to a larger portion of the human family than any other grain, we may allow it on this occasion to take rank as the first among the cereals, and therefore, according to our arrangement of the subject, the last to be treated of. Wheat, however, is clearly the most important of the grains in the temperate zones—especially in the higher latitudes. The Romans gave the name of *frumentum* to all the grains which furnish bread, and in England the same grains are designated by the name of *corn;* but these names were gradually, and by way of eminence, applied more particularly to wheat, as the great staple of bread-stuffs. So the term *froment* is employed by the French in a similar sense. Our colonial ancestors brought with them the English term *corn* as applicable to the European grains, and for the sake of distinction, they gave to the *maize* which they found here, the name of *Indian corn.* In process of time, however, as the other grains had each a proper name, the generic term of *corn* has come to be almost exclusively employed in the United States to designate the maize: and thus the word, like many others in our language, has, by usage, acquired a somewhat different meaning on different sides of the Atlantic.

2. We shall not enlarge on a subject so familiar to all as the value and importance of wheat. We are all aware that in the greater portion of our happy country—especially in the Western and Middle States—it is one of the prominent objects of our agriculture. So long, therefore, as our people shall apply themselves to the tillage of the soil, we may reasonably hope to be exempted from that fearful calamity, a want of bread. In addition to the supply of food furnished by wheat, it is largely and variously used in manufactures. Although capable of yielding alcohol like all other farinaceous seeds, wheat is generally too valuable an article of food to be desecrated by the process of distillation.

3. In our notice of the *cereals*, the last in order—and as is supposed, the first in importance, by reason of its extensive use—is the rice plant, (*Oryza sativa.*) The beautiful grain which this grass affords—though considered by us, here, more as a delicacy than a standing dish—is the principal sustenance of millions of the human race. Being a kind of semi-aquatic plant, rice flourishes best in grounds that are low and marshy, or so situated that they can be overflowed, though there is a variety called upland, or mountain rice, which is much cultivated: and everywhere within the tropical and adjacent regions, where circumstances are favourable to its culture, this admirable grass is to be found. In the southern portions of India, and in China, a dense population is almost exclusively subsisted upon rice. The tables of the wealthy in the East are crowded with elegant preparations of this grain. This plant belongs to a small subdivision of the grass tribe in which the flowers are often furnished with the extraordinary number of *six stamens*, or possibly they may each consist of two florets, concentrated within the proper envelopes of a single flower, by which crowding process all the parts of one of the florets except the stamens may be suppressed, or abortive; a phenomenon of which it is believed there are many analogous instances in the economy of vegetation. The seeds are closely invested by

the inner chaffy envelope or paleæ, after the manner of oats and barley, and while thus coated are known in the East by the name of padda. They are deprived of this covering by passing them between mill-stones, properly adjusted for the purpose, and are thus prepared for the culinary department much in the same way that *hulled* and *pearl barley* are manufactured. The *albumen*, or farinaceous portion of rice, is of a remarkably pure white—almost translucent; and of a very bland, nutritious quality. The gluten which it contains enables the Chinese to manufacture from it various ornamental articles of great beauty and delicacy. This gluten is also said to be an important ingredient in the preparation of *Japan paper*. The art of extracting alcohol from the seeds has been applied to rice as well as to the other cereals. The fiery liquor called *arrac*—the generic name in the East for alcohol—is obtained by distillation from rice, in conjunction with sugar, or the juice of some species of the palm, and in China an amber-coloured wine is also made from that grain.

4. The last member of the gramineous tribe which remains to be noticed on this occasion, is the sugar-cane, (*Saccharum officinarum.*) This interesting plant more nearly resembles the Indian corn in its structure and general habit, than any of the other grain-bearing grasses; but, unlike them all, its value consists not in its seeds, but in the rich saccharine juice contained in its pithy stem. It is found only in warm climates, and flourishes best in the deep, rich soils within the tropics, or in the lower latitudes of the temperate zones. It is propagated by cuttings of the jointed stem, planted in rows, somewhat after the manner of Indian corn. The diameter of the culm does not much exceed that of good specimens of maize, while it varies in height from eight or ten to twenty feet, according to the character of the soil. As it is not cultivated for its seeds, it is of course rarely permitted to flower; but is gathered while the rich juices are yet diffused throughout the stem. When these juices have acquired the proper degree of maturity, the culms are crushed between rollers, the saccharine liquid is expressed, and conveyed into boilers for the purpose of driving off by evaporation the redundant watery portion. This being done to the proper extent, and the impurities duly removed, the sugar is precipitated in crystals, leaving a dark, rich syrup above, which is familiarly known to all by the name of molasses. Thus we are furnished by this magnificent grass with the purest, most nutritious, and universally palatable of all the ingredients that enter into the composition of our food.

5. From the sketch here presented, superficial as it is, we may conclude that the simple tribe of plants technically called *grasses* is not only one of the most abundant, but decidedly the most valuable and important to man of all the many natural families in the vegetable creation. That while its peculiar characters cannot fail to interest the lover of natural science, its uses, abuses, and manifold relations to the welfare of society must ever give it a strong claim to the attention of the agriculturist, the philanthropist, and the political economist.

QUESTIONS.

1. What is the botanical name of wheat, and what is said of the relative value of wheat and rice?

2. Is wheat used for other purposes than food?

3. What is the botanical name of rice? How many varieties? What is there peculiar about its flowers? By what name is rice known to commerce before it is hulled? What is said of the albumen and gluten of rice? What is *arrac?*

4. Give the botanical name of the sugar-cane. In what does its value consist? Where does it flourish best? How is it propagated? When is it gathered? How are sugar and molasses made from it?

5. What is said of the relative value of the grasses and other plants?

WASHING WOOL IN GERMANY.

GERMAN wool is usually quoted as the standard for cleanness, as well as fineness. And our manufacturers have imported wool from thence at high rates, for the purpose of making fine premium cloths. It will not be amiss to give some idea of the pains taken in some of the best districts, to wash the wool before shearing. It is taken from a very valuable paper on German Agriculture in the last Patent-office Report:

Washing Sheep at Alcrúth, in Hungary.—The process of washing is done under the roof, and, accordingly, no sudden showers or rainy weather can interfere with it. Before the shower-bath is administered to the sheep, their dirt and pitch has to be dissolved or loosened. For this purpose a soaking vat is put up, which is covered and tightly put together of strong planks or boards. It is filled with hot water, equal to eighty-four degrees Fahrenheit, the sheep are then placed in two lines and constantly handled until the yolk and dirt are dissolved, which ordinarily takes from fifteen to twenty minutes. The solvent effects of the hot water is increased by adding a few pounds of potash, and also by the lye arising from the natural oily matter of the wool. The sheep, after being well soaked, are placed under shelter, where they have to wait for their turn of the shower-bath, in order that the animal, now too much heated, may not pass immediately from the hot soaking vat into the shower-bath, this being from sixty-one to sixty-three degrees Fah. The water is let upon the sheep through a hose, with a strainer upon the end. It falls with considerable velocity, and is brought to bear upon all parts of the sheep until the wool is of a snowy whiteness. The sheep are then driven to a warm, dry shelter, and shorn as soon as the wool is dry, generally about the sixth day. On an average, forty sheep are thus washed in an hour."

CHARCOAL A DISINFECTOR OF MANURE.

LAST autumn I put into a wine bottle a few spoonsful of guano, brought from the coast of Patagonia, and filled it up with water, intending afterwards to dilute the liquid contents and use it for plants in pots. A few days ago, finding about two-thirds of the contents remaining in the bottle, I drew the cork, when a most insufferable stench was emitted. I was at the time engaged in breaking up some common charcoal, to mix with some earth for potting plants in, when the thought struck me that to pound some and put into the bottle with the guano, might improve the charcoal, and make it more useful in the purpose for which I intended it. I accordingly bruised about as much as would have filled a half pint, and added it to the liquid and guano, thus filling up the bottle. A few days afterwards, wishing to use some of this preparation, I uncorked the bottle, when, to my surprise, not the slightest smell was to be discovered, even with the nose close to the opening of the bottle. Several persons who had on the first opening cried out against the offensive contents of the bottle, now, by my desire, tried it, and could find no offensive, or indeed scarcely any scent whatever. In reference to the guano, which was given to me by the captain who discovered the bed from which it was taken, I would mention that he, at the same time, gave me nearly a small phial full of crystalized ammonia, (having something the appearance of dirty white sugar-candy; it had a strong smell, resembling in some degree that of sal volatile,) and he said that it was found deep in the guano bed, in layers of several inches thick; adding that the effect of the guano digging upon the sailors was such, that they required and insisted upon double allowance of provisions.

J. T.

WADEBRIDGE FARMERS' CLUB.

To the Editor of "The West Briton:"

SIR:—At the annual dinner of "The Wadebridge Farmers' Club," some of the members recommended a system of farming as being superior to most others, but did not show how that system could be carried out; allow me, through your columns, as a young farmer desirous of gaining information, to make a few remarks, and ask a few questions with respect to the system recommended, viz.: that all wheat arishes be put into turnips, such turnips to be eaten by the store cattle, "it not being profitable," as one of the members said, "to feed bullocks in the winter."

Now, I would ask that gentleman how it is possible to keep a sufficient number of store cattle on a farm to consume profitably the turnips grown on the fifth part of the estate.

We will take, for example, a farm of superior quality, say 185 statute acres, worth about 35*s*. ($8·40) per acre rent, which will, by good management, winter about 55 bullocks of every description, and about 140 sheep. We till 37 acres of wheat, and consequently 37 acres of turnips will follow per year; 15 tons per acre being a fair average crop, we have 555 tons of turnips to be consumed.

Now, I find, if we allow 60 lbs. of turnips per day for every head of cattle on the farm, both great and small, each will have a sufficient supply, and if you give much more than that quantity, they will not eat the straw necessary to be eaten. One acre will therefore last three head of cattle the winter, and 18½ acres will be ample for the whole number; 4½ acres will be enough for the sheep, allowing them the third part of their whole living to be turnips; one acre more will be quite enough for the horses, pigs, house, and general purposes, which gives us 24 acres. What, then, is to be done with the remaining 13 acres?

The number of cattle I have given will consume all the straw grown on the farm, supposing you grow about 3000 lbs. of wheat, and 2000 lbs. of barley-straw per acre, one-sixth of the wheat-straw to be converted into reed for general purposes on the farm, the whole of the remainder to be consumed by the cattle, and used as litter; and there must be great care used to make this last the whole of the cattle through the winter. And in order to keep the horses necessary to do the work, and the number of bullocks and sheep I have named on this number of acres, the soiling system, together with rape and vetch-growing, must be carried on to some extent, or the stock cannot be kept in proper condition on the farm. I should therefore be glad to know of the gentlemen who recommend such a system of cropping, how it is to be carried out, and also, if carried out, how the farmer is to be remunerated for his outlay. A crop of turnips will cost about £7 5*s*. per acre—viz.: preparation, artificial manure, seed, and hoeing, £4; rent, 35*s*.; drawing and carting to the farm-yard, at least, on an average, 30*s*. per acre; and if the farm-yard is at one end of the farm, as too many are, or if the farm is a *hilly one*, this cost will be *greatly enhanced*. How is the farmer to make the turnip crop pay? It cannot be by ploughing turnips down for manure, nor by carting twenty or thirty loads into a field at once, to be there eaten, trodden down, and destroyed by a few bullocks and sheep. And I myself doubt whether it will pay to give to cattle even the allowance that I have named.

A YOUNG FARMER.

Is the reader at a loss to know why we give the above? We answer, has he no curiosity to know the cost of manure—the rent of land—the common produce per acre,

and the consumption per head, of straw, turnips, &c., in a country where, above all known to us, agriculture is most advanced? We edit a paper which is intended to serve, in some measure, the uses of travelling, to those who cannot leave home, and to impart to the reader that greatest of all pleasures, the pleasure of learning what is new or useful, even though it may not result immediately in *gold dust!*

Let him, in reading the above, put down the pound sterling at $5, and the shilling at 24 cents—or thereabouts.

For the same reason we give the following extract from a late speech in Parliament, to show the burdens on landed property in England:

A. has an entailed estate, valued at a clear rental of £5000 a year, tithe free, and exclusive of the mansion. This estate is directly charged as follows:

Poor, county, and church rates, at 3*s.* in the pound	£750
Land tax	179
As income tax upon an actual rental of $4600	138
As tenants' property tax upon farms above £300 a year, on £3200	96
	£1163
House in London assessed for rates at 3*s.* in the pound on £400	60
Total	£1223

B. receives £5000 a year clear from the funds or annuities. He pays in direct taxes as follows:

For house in London, rated on a 3*s.* in the pound rate, on an assessment of £400	£ 60
Income tax on £5000 per annum	250
Total	£310

(Hear, hear.) In a word, A., in consequence of being in possession of land, is taxed to the amount of £1223; B., a fund-holder of the same income, is taxed to the extent of £310. Does this correspond with the idea of fairness and equality entertained by the honourable member for Montrose? (Hear.) The Chancellor of the Exchequer, in the first part of his statement, said he did not lay claim to the title of practical farmer; and the subsequent portion of his speech made me rather feel that he had not over-stated his deficiencies upon this head, (a laugh.) The right honourable gentleman would not speak so charmingly of the state and prospects of agriculture if he were practically acquainted with its condition. Why, sir, the farmers are positively unable to find a market, either in London or the country, for their wheat and stock. I was informed, not many days ago, by a farmer in Sussex, that the wheat grown there this year was of good condition and quality; this man sent his wheat for sale to the market of Lewes, and it was not merely that he could not get a moderate price, or even a low price for it, but he could get no price whatever for it, (ironical cheering from the free-trade benches.) Well, but I know that to be a fact, and I repeat that no price could be had for the wheat—it was a drug in the market. The right honourable gentleman the Chancellor of the Exchequer and the noble lord at the head of the government differ very materially in their view upon the question of the burdens on land.

To Preserve Clothes.—As clothes, when laid up for a time, acquire an unpleasant odour, which requires considerable exposure to the atmospheric air to remove, it can be prevented by laying lumps of recently made charcoal between the folds of garments: and even when the odour is already fixed, the charcoal will absorb it.

PERMANENCY—WHAT PREVENTS IT?

From one of our free trade papers we take the following, which we commend to the consideration of our agricultural readers:

"Permanency is above all things necessary to the producer. But the foreign market is so unsteady that no reliance can be placed upon it from year to year.

"In 1838 we exported 1,319,000 bushels of wheat; in 1839, 4,670,000 bushels; and in 1840, 11,196,000 bushels; in 1845, the export fell to 6,365,500 bushels; in 1846, it rose to 13,060,000 bushels; in 1847, it went up to 26,292,000 bushels; and last year, 1848, it came down to 12,561,000 bushels, a falling off of more than one-half in a single year."

Let the farmer compare this with the course of things at home. In 1842, we made less than 400,000 tons of iron. In 1847, under the "benign influence" (to use the words of the late Secretary of the Treasury) of the tariff of 1842, the farmers and planters found among the iron-makers a market for their products, to the extent of the value of 800,000 tons. In 1844, we consumed about 300,000 bales of cotton. In 1847, the planter found a market for 600,000 bales, and the farmer for all the food required for feeding the men who built the mills, and made the machinery, and converted the cotton into cloth. In the same period, the woollen manufacture grew from twenty to forty millions, giving the farmer a market for more of his products than was afforded by all the "great grain markets of the world" in 1848. Let the farmers and planters examine the facts for themselves, and see whether permanency is to be found in depending upon all the other countries of the world for a market for products that *must* be sold, whatever be the price—or in making a market at home by the pursuance of a system that will enable the converters of wool, and cotton, and iron ore, into cloth and iron, to remain by their sides, consuming food and cotton, instead of flying to the West, there to become producers of food and cotton.

THE LANDED INTEREST.

York Farmers' Club.—At the last monthly meeting of this club, Mr. Smallwood, of Middlethorp, in the chair, a paper was read by Mr. Raines, 'On the best plan for preparing land for spring crops.' The plan recommended was—first, to make the land dry by thoroughly draining; secondly, to grow as many root or fallow crops as grain; thirdly, to clear the land by scarifying or broad-shearing the stubble immediately after harvest; fourthly, to plough the land in sufficient time to get tempered by the atmosphere; fifthly, to plough deep for the bean and root crops; and, sixthly, to manure sufficiently for them, so as not to have to apply any to the grain crops.

Dunmow Farmers' Club.—The members of this Society have lately shown an earnestness and activity in the endeavour to obtain some redress for the agriculturists in the present time of depression, which is well worthy the cause they espouse, and, as they hope, calculated to *stimulate the clubs of a like nature in other localities to be up and doing.* A petition to Parliament, setting forth the extreme difficulties under which the farmer is at present labouring, praying for the repeal of the malt-tax, and the imposition of a duty on all foreign corn and cattle brought into this country, has received nearly 400 names of the most respectable parties in this part of the country and the neighbourhood, among whom are occupiers of 80,000 acres of land.—*Essex Standard.*

In our country, boasting its peculiar freedom, farmers too rarely meet for free deliberation on the bearing of the laws upon their own interests. When it is proposed to them to unite, for example, in demanding the establishment of appropriate schools for the plough as well as the sword, you will see some old party bellwether or sly demagogue pass a knowing whisper—*Prenez garde! there's a cat in that meal-tub!*—and lo! the great cause of education is abandoned for the sake of—*the party!* The darker the moral atmosphere, the better for the demagogue.

IMPROVING LAND.

MANURE derived from cat-tails and bulrushes is worth something, but that which clover and peas draw from the earth is worth five times more, pound for pound. One hundred pounds of rye, harrowed into the earth, in a corn-field, at the maturity of the crop, has organized more than a ton of fertilizers by April, to be plowed in, and feed a summer crop. For ewes with lamb, or while nursing their offspring, a moderate allowance of green rye, early in the spring, is capital. Have valuable plants always growing the year round, so far as you can, on every rod of land, to feed domestic animals, unless it is thought best to sell the crops. To make the most out of vegetable vitality, it must ever be kept at work, accumulating manure, which should be saved *somewhere*. A pea can work wonders in the way of storing up fertilizers in an available form. A carrot seed has a gift in the same line; but the little clover seed has a perfect gem. Small as it is, the growing plant cannot live on air alone. It consumes a good deal of sulphur, and often requires gypsum to supply it.

Good farmers at the South make great use of forest leaves, and leached ashes, in their compost heaps. These leaves are generally rich in potash, and other earthy salts, as well as in organic matter.

Suppose you raise sheep for their wool, meat, and tallow, and sell them when three years old. The manure that can be made by a sheep in three years, with the aid of good plants to draw minerals from the subsoil, and gases from the atmosphere, will be about equal to the production of food for two sheep at the end of the term. Nothing is plainer than the fact that organized matter, consumed and voided by a sheep, will greatly favour the growth of food for another animal. And, although about sixty per cent. of the matter eaten escapes from the lungs in the form of carbonic acid, and vapour—and through the pores of the skin, by insensible perspiration—yet the other forty per cent. voided by the bowels and kidneys adds more to the soil, in the way of mould, than was probably consumed in making the plants fed to the sheep.

Rural industry is very generally spread over too much surface to be profitable in the highest degree. This occasions great waste of travel in a man and beast. It also leads to a bad system of husbandry, by robbing remote fields of their fertilizing atoms, not a few of which cows, and other domestic animals, drop in the highway. A farm being a sort of chemical laboratory, it is miserable economy to have it ten times larger than one has any use for. Less land, and more money drawing seven per cent. annual interest, which will double the principal in ten years and a half, would be an improvement in the circumstances of more than one reader of this journal.—*Genesee Farmer.*

Give the Devil his Due.—That bad king and worse husband, Henry VIII. of England, was yet not a bad pomologist. To his honour be it said, that he imported for the royal gardens, from France, both apples and pears. Many passages, it is said, may be found in his correspondence with his ambassadors abroad, on the subject of fruits. He is entitled to the credit of having imported into England the *Pomme du roi*, vulgarly called the Pomeroy apple—also the *Pair de Maine*, as well as most of the pippins.

It would not be amiss if we, in the diplomatic correspondence of some other countries, were favoured in like manner. Mr. Jefferson, when Minister to France, paid a visit to Parma, and there, in the dairy, noted and published the whole process followed in making the celebrated Parmesan cheese.

POTATOES.

Though this is not the time of year to put it in practice, yet it is the time to see the evil effects of other plans, and therefore I mention it now. I believe I got the idea from some one of your correspondents some years since. When you get up the potatoes in autumn, instead of putting them in hogs or pies, as they are called, mark out in a level place ground three feet wide, level it about two or three inches above the surface, spread your potatoes upon it one layer thick, then put two inches of soil, then a layer of potatoes, then soil, and so on, gradually coming up to a ridge. At first a very slight quantity of soil will do, but before winter sets in they require a covering of six inches, and some fern or litter over all in frost. This plan seems tedious, but is in reality done as quickly as hogging, or very nearly so. It keeps the potatoes excellent to eat, preserves them from rot better than any plan, and for seed nothing can beat it. I have been planting the last fortnight, and the seed taken out of these earth hogs is just as when it first came out of the ground in autumn, the eyes just showing, and the skin fresh, healthy, and bright. My gardener had a great prejudice against this plan at first, but now, after three years' practice, says there is nothing like it. I believe it does much to invigorate the potato plant, as there is no vital force lost in pushing sprouts. I am aware that gardeners often keep their early kidney seed in outhouses, &c., upon this plan, but this cannot be done with a large quantity for field culture, added to which I find the potatoes keep much better, both for eating and seed, than when spread in a cellar, on a granary floor, or packed in barrels.—*English Paper.*

Peeling Potatoes.—Payen, the great French chemist, informs us that starch is not found in the epidermis, or in the tissues immediately subjacent, but that nitrogenized matters principally reside in these parts of the tuber. Hence a loss of the most nutritious portion of the vegetable is incurred by the common practice of peeling off the rind and parts underneath, before the boiling commences. It should also be remembered that cold water dissolves, while boiling coagulates, albumen. If potatoes, therefore, are thrown into cold water, and gradually heated, much of their nitrogenized principles will be extracted before the water reaches ebullition, while if it be made to boil before they are introduced, the coagulation will cause these matters to be retained within the tissue of the vegetable.

Fall Crop.—Early this month, [July,] if not done in the last, a fall crop of potatoes may be planted in the Middle States. The ground may be furrowed out, pretty deep: let the furrows be three feet apart, and a good coat of rotten manure spread in them, about three inches thick; place cuttings of the potatoes having two or three eyes in each, about ten or twelve inches apart, in the rows, and cover them with about six inches of earth. A few days before they shoot up through the ground, harrow them over with the back of the harrow, which will considerably check the growth of the weeds, and after they appear above ground, a small harrow may be run over the ground, between the rows, which may be expeditiously done; after which the hoe and plough must be used to destroy weeds.

The potatoes planted early in the spring will now be fit for use.

SHEEP OF CLARKE COUNTY TWENTY YEARS AGO.

New Market, Clarke County, Va., May 30, 1849.

DEAR SIR,—I send you a scrap from an old Winchester paper, as confirmatory evidence, (in addition to that of my friend Thomas F. Nelson,) going to prove that the sheep of Clarke County, twelve years ago, would have borne a very favourable comparison with those of the present day. The fleeces of Mr. Meade's sheep, as stated by Mr. Nelson, were much more remarkable than Mr. Burwell's; but the scrap speaks for itself, and revives the memory of old things that are passed away, and should not be forgotten in this age of seven-league-boot-strides in improvement. I think I am not mistaken in saying that Mr. Meade and Mr. Burwell gave the first impulse to the improvement of stock in this county. Mr. Burwell's sheep were a cross of Bakewell, Southdown, and Barbary: the memorandum was taken about the year 1837.

Yours, most respectfully, ROBERT C. RANDOLPH, M. D.

Unprecedented Weight of Sheep and Wool.—When the sheep at Spout Run were sheared, on the 18th of May last, a yearling *ram* and five of the *ewes* were weighed, as follows: the ram, 174 lbs.; his fleece 5 lbs.: 1st ewe, 196 lbs.; fleece 5 lbs.: 2d ewe, 170 lbs.: 3d ewe, 190 lbs.; fleece 7 lbs.: 4th ewe, 164 lbs.; fleece 5 lbs.: 5th ewe, 164 lbs.; fleece 5 lbs. Only two are considered at all above average weight of the flock. The wool was *clean-washed*, otherwise the fleeces would have weighed from 7½ to 11 lbs., and the ewes were all suckling lambs. These two considerations taken into view, it is believed to be the greatest exhibit of weight of carcass and fleece ever made in the United States by a flock of ewes. These sheep were raised and improved by my friend Mr. Thomas H. Burwell, of Spout Spring [Run], Clarke County, Va.—*Winchester Virginian.*

POOR HUMAN NATURE!

Neighbours.—I have heard of a gentleman of large fortune, who, for some years after his residence in a particular neighbourhood, did not set up his close carriage, but afterwards finding it more agreeable to do so, was surprised to find himself called upon by a host of carriage keeping people, who did not seem previously to be aware of his existence; and rightly deeming the calls made upon his *carriage* rather than *himself*, sent round his empty carriage to deliver cards in return.—*Howitt.*

Can any thing be more at once contemptible and ridiculous than the rivalry we sometimes witness in large towns between the "ladies" of the *new-rich*, as to the *livery* of their coachmen and out-riders, and even the horse-covers! Their coal-black servants, with their milk-white gloves and gold bands on their hats, and long white comforts dangling from the necks of their footmen! You shall see the smirking wives of some, born in Bottle Alley, who have grown rich by luck in trade, seek to gain distinction and contrive to have *their* equipage "look far at a distance" by covering their drivers in winter with great scarlet blankets! How much more sensible to take the course of moderation and decent propriety suited to our republican institutions and habits, and to laws under which even the largest fortunes dwindle to a pittance in the hands of the third generation!

How much more honourable would it be in some of these semi-millionaires, if they would have painted on the panels of their fine coaches a molasses hogshead, a hatter's block, or a shoemaker's bench, awl, and lapstone, with the motto, "Honour thy parents!"

A PROTEST AGAINST PUFFING.

In respect of the following, we are at some loss what to say, not fully understanding what is meant. In the first place, we have ever been disinclined to being the medium of criticism unfavourable to any "Editors of agricultural or other papers," except of ourselves, and for ourselves rather court than deprecate fair and well-meant animadversion: our convictions strengthening with experience, that no degree of vigilance or of honest intention can well guard against the occasional shortcomings and faults of editorial ignorance and indiscretion.

Now, as to Montgomery County, except "in regard to that important consideration of health," in which "no one will undertake to deny that Montgomery is highly favoured," we are not aware that she has ever been puffed off for the possession of any extraordinary natural advantages or fertility; but, somehow it must be admitted the impression *has* been imbibed, as to the "Sandy Spring" district, that it is somewhat remarkable for the natural fruits of systematic, intelligent industry, sobriety, and thoughtfulness of what they are doing. True, like some adroit and lucky politicians, it *may* have acquired a repute beyond its deserts. Sorry are we not to be able to speak from personal observation, for of all the counties of our native State, it is the one, except Caroline, of which we have seen the least; but we give our friends "of that ilk" fair notice that if we ever have the leisure and luck to beat up their quarters, we shall be disappointed if we don't find—"Find what?" says the reader.—Well, among other things indicative of thoughtfulness and thriftiness—gardens better filled with what the Yankees call "kitchen sauce"—orchards more thrifty—more ornamental and shade trees about their grounds and houses—boggy spots better drained—stock better sheltered and cared for—ploughs running a *leetle* nearer to the fences and ditches—wives rising earlier, and more tidily (not gaudily) dressed—more roses and honeysuckles and jessamines about the yards and doorways—dairies sweeter and cleaner—children better clad and mannered, and fewer worthless *dogs* and yet more worthless *drunkards*, than in some other counties, where liquor is sold "by the small," and gambling and swearing are esteemed gentlemanly vices, and *party politics* the only subject on which men can be excited to devote their mind and their means.

Montgomery County, Md., 5th mo. 16, 1849.

Friend Skinner:—In accordance with a resolution of "The Farmers' Club of Sandy Spring, Maryland," I hereby forward for publication in "The Plough, the Loom, and the Anvil," a copy of some remarks written with a view of correcting erroneous impressions with regard to the state of agricultural improvement in our neighbourhood; and also to protest against the system of puffing pursued by some editors, in which sentiment we think we have the concurrence of a large majority of our agricultural brethren.

Very respectfully, thy friend,

Henry Stabler,
Secretary of Farmers' Club of Sandy Spring.

"The undersigned, members of 'The Farmers' Club of Sandy Spring,' regarding the character of our neighbourhood, and the true interests of agriculture, as being compromitted by the tenor of a certain class of recent publications, deem it proper to make the following declaration of our sentiments relating thereto.

"We have seen with regret a number of published statements in regard to the condition of agricultural improvements amongst us, which are calculated to mislead the public, and to raise expectations in the minds of strangers which an actual inspection would fail to justify. In order to set this matter in its true light, we will venture to present the following statement of facts. The neighbourhood of Sandy Spring, in which we reside, occupies a space of some nine miles in extreme length, by six or seven in extreme breadth, in the eastern part of Montgomery County. It is situated, for the most part, on one of the spurs of Parr's Ridge, having its north-eastern border watered by the Hawling's River.

This latter portion of the neighbourhood possesses considerable natural fertility of soil, and is well improved, containing some of the best farms in the county. But the residue of the neighbourhood, being the greater part of it, has not been particularly favoured by nature. The soil was never a deep or fertile one; and it has had to suffer the same process of exhaustion pursued generally by the early settlers of the State. Unlike what is inferred by strangers on hearing the name by which the neighbourhood is distinguished, the texture of the soil is rather *clayey* than *sandy* in its composition. We have no desire to disparage the quality of our lands, but the fact is undeniable that they are not generally very easy to improve. Still, abundant evidence has been given that they are susceptible of improvement in a high degree; and in the face of difficulties attending it, a decided and very encouraging change for the better has already been effected in their condition. It would be altogether improper to assert that there is a single farm lying out of the favoured section on or adjacent to Hawling's River, that has been brought as yet to any thing like a high state of cultivation; but a good deal has been accomplished, here and there, "about in spots," which gives favourable promise of what the future is likely to bring. There is another point here, however, which we feel required to notice, by that desire to remove erroneous impressions, which has prompted us to make these statements. It is a fact that the greater part of the improvements recently effected in our neighbourhood, and especially the more showy part of them, has not been accomplished through the resources furnished by the soil itself. Many of our ingenious residents have other occupations, the profits of which have been meritoriously expended upon their farms. We conceive this to be a fact too material to our present purpose to be neglected or forgotten; and we have no fear that any good cause can be injured by the statement of facts. Agriculture is too weighty an interest to be propped up, or to need propping, by any concealment of the truth.

"We have been induced to make these statements with a view to vindicate our quiet and industrious community from the imputation of being a boastful people, ambitious of pre-eminence over others who pursue the same calling. Our great desire is to fulfil our duties as citizens, in a quiet and unostentatious manner, by contributing our humble mite towards advancing the agricultural interest of the country, and rendering it respectable in the eyes of all.

"In furtherance of this view, we wish also earnestly to protest against the system of *puffing* which has been pursued by some agricultural and other editors, the effect of which is not only disastrous to the persons thus extravagantly eulogized, but is destructive of all confidence in the value of editorial commendations; and the useful, the meritorious, and skilful farmer is thus deterred from exposing himself to the notice of the public. We desire to see that caution and modesty used in agricultural publications which will enable them to enlist and retain the confidence of the community, and thus to render the most important services to the great cause they are intended to promote.

"Henry Stabler,	Benjamin Hallowell,
Wm. H. Farquhar,	Thomas P. Stabler,
Caleb Stabler,	Mahlon Kirk,
Robert R. Moore,	Edward Thomas,
Richard T. Bentley,	Wm. John Thomas,
George E. Brooke,	Edward Lea,
Samuel Ellicott,	Roger Brooke, Jr."

In this statement there is one fact particularly worthy of notice—that the greater part of the visible improvements have not been effected by the resources inherent in the improved farms, but by the profits of other occupations "meritoriously expended" for that purpose.

Surely that praise, if any, should not be called puffing, which is bestowed on the public spirit of those who thus devote the profits of other occupations to the purpose of showing how agriculture will ultimately remunerate any assistance she may derive from her sister pursuits. The effect is to teach moneyed men of the towns how they may better and more securely employ a portion of their surplus accumulations in the more useful and less precarious labours and arts of cultivation. But is not the susceptibility of Montgomery lands, and all that has been said in their behalf, in a great measure confirmed by the remark we find in an interesting report of the Montgomery County Agricultural Society, signed as Chairman by Mr. Farquhar, in

which it is said, "we are sanguine in the belief that the agricultural improvement during the last ten years has been *wide and general!*"

And again says the report, "Now since the annual value of the agricultural products appears to be at least $600,000, we thus obtain a yield of 20 per cent.—a *pretty fair annual per centage* on the *capital of Montgomery;*" and this, too, notwithstanding, as is added in the same document, "of the lands professed to be farmed at all, it may safely be said they are not more than *half tilled.*" "Twenty per cent. on the capital of Montgomery County," and only half the county under the plough, and that half only half tilled. Who ever contended for higher capabilities or higher results? In what light this statement—this 20 per cent. on the capital of Montgomery County—is to be understood, we may take some early opportunity to examine. We had heard something of this report, and applied most respectfully, in what we deemed the proper quarter, for a copy, but were not favoured with any answer. It serves our purpose, however, reaching us through the ever-respected columns of our old "American Farmer."

HOW TO IMPROVE WORN-OUT LANDS.

In the last number of Vol. I. under the head "Lime and other Manures," we gave some extracts from Mr. Stabler's Prize Essay, published in "The American Farmer," on the "Restoration of Worn-out Lands." According to promise, we now submit some from Col. Capron's Essay on the same subject. We are pleased to see him begin by dwelling emphatically on the *need of capital* in agriculture, and do not know any subject more worthy of investigation and report by a committee than the inquiry—Can any means be devised for securing to industrious farmers of good judgment and character, a moderate amount of means to be expended in lime and in draining? Let that question be one for discussion at Farmers' Clubs. Why is it that capital, wherever it comes into existence, maketh itself wings and flieth away into the towns? Even country banks, created in the promise of assistance to farmers in the way of advancements on their crops, soon fall under the influence of this centripetal tendency, and, applied to for a loan, take special care to make the farmer understand that he is first to give them "an acceptance" in the Metropolitan City, at "60 days," and to consider it a *great favour* to get it at that! But to return to Col. Capron's essay, regretting that we have not space for it entire. Here is what he says about CAPITAL:

To accomplish this great object, the renovation of worn-out lands—and to be perfectly successful in our farming, as in every occupation in life, *capital is not only desirable but necessary.* Industry and skill may supply the place of capital to some extent—capital would be of little use certainly, without proper judgment in its appropriation; hence the importance of availing ourselves, as far as possible, of the experience of other people, through the agricultural publications of the day. These, in the hands of a man of observation, lessen the required amount of capital—save many useless and expensive experiments—strengthen his own perceptions, and give him the advantage of the wisdom and experience, not only of farmers of the present day, but of ages preceding—and I would therefore recommend to every farmer, that the first entry upon his expense account should be for an agricultural paper.

A floating or working capital in this country is not looked upon as a matter of sufficient importance—the great object of an American farmer appears to be, how many broad acres his farm shall contain, not how much it shall produce him per acre, and therefore when he purchases a farm, he generally lays out the whole of his available means for the purchase of the greatest number of acres, leaving himself, if not in debt for the payment of his acres, already stripped of the very means to make it productive.

In England, a certain amount of active capital is considered a "*sine qua*

non" in a tenant—fifty dollars for each acre of arable land to be used as a floating capital for the purchase of stock, farming utensils, manures, &c., would be considered low. *In this country*, there are instances where $100 have been expended annually in manure, upon an acre of ground, with a profit. Generally speaking, the want of success in the American farmer may be ascribed to this very great oversight—the deficiency of active capital. While in England the great success of many of their tenant farmers, borne down as they are by tithes and taxes, may be accounted for, in their judiciously using so large an amount of capital for the purchase of manure, seeds, stock, &c.

As capital then is considered one of the most important elements to success, I would recommend seriously to the consideration of the American farmer, whether he could not to advantage dispose of some of his broad acres, and apply the proceeds in bringing into more profitable cultivation the balance of his land—and I have fixed upon $20 for each acre of arable land as a minimum sum required. The more you employ, judiciously however, the more *expeditiously and profitably* will you resuscitate your impoverished lands.

System is the next in importance, if not the most important object for the consideration of the American farmer, if he looks forward to independence in his occupation—for in this is economy, and without economy no farmer can prosper. He should have system in the regulation of his homestead, in the selection and arrangement of his farming utensils and stock—in the keeping of his accounts—in the feeding and watering of his stock—in the milking of his cows, and his going out and coming in from work. With a perfect system he must succeed, and without it he must falter, if he does not entirely fail.

Farm accounts are absolutely necessary to carry out any system—to check expenditures in unprofitable manures, and the cultivation of unprofitable crops; aside from the satisfaction the farmer derives, in being able to know at the end of the year, what he has made or lost in this or that expenditure: it prevents imposition, and enables him so to shape his course for the ensuing year, as to avoid such experiments as have proved unprofitable the year past, and profit by the further prosecution of those that have proved lucrative.

ARTIFICIAL MANURES.

Poudrette, I have found a good manure, (when unadulterated,) sown with grass seeds, and rolled in with them. Six barrels per acre, put on this way, on wheat, where guano has been ploughed under, will set timothy, orchard grass, and clover well.

Lime, the greatest and most lasting improver of nearly all soils, and one most to be depended upon, should always follow, upon all grass lays, the fall after the first crop has been removed. One hundred bushels per acre spread upon the sod, to remain for two years, is in my opinion the most judicious application of lime. I prefer this method of applying lime, to the slower, but not less certain mode of applying it to the surface of the old fields, to remain from three to five years without being cultivated. First, because you hasten your improvement, which is always gratifying, and by furnishing the vegetable matter for the lime to act upon, you can increase the quantity applied to advantage, and get a more speedy return for your outlay.

Men of large capital may renovate these worn-out lands with a profit, by the use of lime alone, as has been fully demonstrated upon a magnificent scale in this State—applying the lime at the rate of one hundred bushels per acre to the old fields, to lay five years, to be followed up by another

hundred bushels per acre, and at the end of the next five years you may calculate to get a ten per cent. interest for the money thus invested. For men of small capital, the only possible plan is to commence with the highly concentrated manures, and follow up with the lime as your means will allow—never losing sight of the fact that your lime must go on, sooner or later.

The manner of applying these different manures, which I have followed, and always with entire satisfaction, is as follows: If there are any gauls or washed places in the field, cover them well with stable manure, if you have it, or the richest woods' earth or ditch banks you can procure previous to breaking. Then fallow the whole field deeply, say eight inches—roll the ground to break the clods, if stiff soil, and follow with the harrow as directed. If ashes are to be used, when the ground is thoroughly prepared for seeding, throw them on broadcast, and plant or sow your seed, and harrow all in together. If guano be used, just before seeding spread your guano, and cross plough or cultivate it in, say four inches deep or more, sow your grain, harrow and roll. If poudrette be applied on same field, to set your grass seeds more effectually, sow your poudrette after cross ploughing your guano in, sow your seed and harrow all in together.

Bone Dust to be applied in the same manner as the ashes or poudrette.

Plaster should always follow all the above applications, in the spring of the year, upon the young clover, at the rate of one bushel per acre. March is the most suitable month.

This carries us forward in the stage of our improvement to a period when, if we have been judicious in our application of the manures, and thorough in the cultivation of our grounds, we may begin to dispense with foreign aid, and live upon our own resources, and adopt the self-renovating principle.

And now, Mr. Editor, it appears to me that, however we may differ as to the effect or permanency of this or that manure—or the best method of accumulating or applying manures, or the most judicious rotation of crops, or the most profitable crops to be raised, there can be but one opinion as to the fact, that if we expect large returns for our labour, we must be liberal in our treatment of the soil, liberal in the application of manures and seeds, and liberal in the labour we bestow in the cultivation of our crops; and always bear in mind that the cost of producing five bushels of wheat or other grain per acre on poor land, is the same, in labour and seed, as to produce twenty-five or forty on land in high condition.

It may be satisfactory to your readers (should you deem this worthy of publication) to know from what data I derive my information; and although it is disagreeable to me, as it must be to every one, to be thrusting his own affairs before the public, yet, having had the most accurate accounts kept with the farm, and the result being entirely satisfactory, I feel that the cause in which we are all so much engaged demands this sacrifice at my hands. I have therefore had prepared an accurate tabular statement of the whole outlay under different classifications, as also the receipts since my first commencement to improve this farm, from which I am enabled to present the following facts:

This farm contains 1092 acres, 700 acres of which have been fenced and improved, and the balance is in wood.

To show the effect of manure properly applied, I give below the amount expended annually in foreign manures, which, with all the manures that could be created on the farm by the increased product caused by this application of mineral manures, amounting in 1847 to near 1000 two-horse loads, were regularly applied, (all the hay and straw being consumed upon the farm.) The present year very little foreign manure is required.

		Manures.	*Grass Seeds.*		
1841—	Purchased	$347·63	$113·41	Sold in value,	nothing.
1842	"	734·80	63·49	"	$507·50
1843	"	262·60	155·83	"	1,344·41
1844	"	123·63	457·30	"	2,796·20
1845	"	1,124·85	226·97	"	3,722·51
1846	"	3,035·23	732·14	"	11,626·29
1847	"	2,546·02	519·50	"	14,777·02
		$8,174·76	$2,268·64		$34,773·93

Total amount of receipts for the 7 years,		34,773·93
To which must be added the wood sold from the clearing up of the fields,		1,495·41
Total receipts,		$36,269·34

The following exhibit will show the entire outlay, exclusive of buildings:

Expended for manures,	$8,174·76	
" seeds,	2,268·64	
" labour on farm, fencing, ditching, under draining, grubbing and cleaning 700 acres,	18,053·77	
Other expenses, overseer, salaries, travelling, blacksmith and wheelwright bills, and materials for draining, &c.,	5,866·70	
		34,363·87
		$1,905·47

Leaving a balance, after paying all expenses for manures, seeds, fencing, ditching, grubbing, cleaning and improving **700** acres of barren land, in seven years, **$1,905·47.** The improved value of the land being an additional gain.

This statement is exclusive of all outlays for land and buildings, and interest on same, farming utensils and stock, as those items are according to the fancy of the proprietor, and are supposed to be worth cost, and cannot be charged against the improvement of the land, the actual cost of which, it is the object of this communication to show.

The following tabular statement exhibits all the expenditures and receipts, embracing first cost of land, improvements in buildings, fences, &c., together with the present estimated value of land and tenements, as put upon it by disinterested parties, showing a complete sheet of the entire operations and the net gain in seven years, which I respectfully submit for your perusal, with the simple remark that the account of stock was taken 1st January, **1848,** by disinterested parties, for my own satisfaction, in which all the full bred stock was put down at common stock prices, and all other stock and farming utensils at their cash value, making a difference of several thousand dollars below the first cost, a copy of which inventory will be left at the office of "The American Farmer," for the satisfaction of those who wish to inspect it.

As the farm is intended for purely a stock farm, all vegetable productions have been consumed upon the place, and the wheat, &c., have been sold and converted into other feed, and consumed by the teams and other stock, and the proceeds received in the way of milk, live stock, work done off the place by the teams, under the head of hauling.

The amount of sales of wheat and other produce not consumed during the same period, but sold and converted into feed for stock, was **$15,000.** The purchase of other feed, **$15,800,** the balance of purchase over sales carried into the expense account, and the produce account retired, to simplify the account, as it would not in the least alter the balance.

COL. CAPRON'S FARM.

Expenditures.

Date.	Manure.	Labour.	Seeds.	Expenses.	Total.
1841	$347 63	$752 74	$113 41	$285 87	
1842	734 80	989 60	63 49	285 88	
1843	262 60	1,134 92	155 83	428 42	
1844	123 63	1,569 36	457 30	542 96	
1845	1,124 85	1,890 47	226 97	234 67	
1846	3,035 23	6,304 67	732 14	1,214 94	
1847	2,546 02	6,412 01	519 50	2,873 96	
	8,174 76	18,053 77	2,268 64	5,866 70	34,363 87

To improvements, embracing Barn, Tenant Houses, Fences, &c.		13,743 39
To 1092 acres land, original cost,	$10,361 62	
To interest from average time of purchase, from 1st Jan., 1845, to 1st Jan., 1848, . . .	1,865 09	
		12,226 71
To amount paid for implements, cost, freight, &c., included, ...		3,247 49
To amount paid for live-stock, cost, freight, expenses, &c., included, ...		8,332 73
Balance down,		37,516 65
		$109,430 84

Receipts.

Date.	Milk.	Rents.	Hauling.	Live Stock.	Wood.	Inventory.	Total.
1841							
1842		$465 00	$12 50	$30 00			$507 50
1843		243 50	814 05	286 86			1,344 41
1844		260 75	2,435 45	100 00			2,796 20
1845		588 42	3,134 09				3,722 51
1846	$1,394 87	845 45	8,952 87	433 10			11,626 29
1847	3,652 61	691 00	4,817 66	1,025 25	$854 50	$3,736 00	14,777 02

Wood sold from clearings,		1,495 41
Whole amount of sales,		$36,269 34
By Inventory of Live-Stock, Farming Utensils, and produce on hand, to January, 1848, as taken at a low cash value, ...	$11,377 50	
By less amount included in above table, . . .	3,736 00	
		7,641 50
By present value of 1092 acres of land, and buildings, as estimated by the Farm Committee of Prince George's County, at $60 per acre, ...		65,520 00
		$109,430 84
Balance down being net profit,		$37,516 65

LIVERPOOL PRICES.

The following table, showing the net value in dollars and cents, of Flour, Wheat Corn, and Corn-meal, at the respective prices in Liverpool, will be of interest to produce dealers and farmers. It shows what the Liverpool prices will net to the American shipper:

Cost of Wheat, 1¼ American bushels calculated to net 70 lbs., including freights at 8*s.* per qr. of 480 lbs.; duty 4, insurance, one month's storage, all landing charges and commissions; exchange, 108:

Free on board. Per bushel 56 lbs.	In Liverpool. Per bushel 70 lbs.	Free on board. Per bushel 56 lbs.	In Liverpool. Per bushel 70 lbs.
	s. *d.*		*s.* *d.*
$1·00	7 7	$1·30	9 3
1.05	7 10	1·35	9 6
1·10	8 2	1·40	9 10
1.25	8 5	1·45	10 1
1·20	8 9	1·50	10 4

Cost of Flour, including freight at 2*s.* 6*d.* per bbl. and 5 per cent., one month's storage, duty 2*s.* 5*d.*, insurance, all commissions and landing charges; exchange, 108:

Free on board. Per barrel 196 lbs.	In Liverpool. Per barrel 196 lbs.	Free on board. Per barrel 196 lbs.	In Liverpool. Per barrel 196 lbs.
	s. *d.*		*s.* *d.*
$4·50	26 6	$6·00	33 2
4·76	27 8	6·25	34 4
5·00	28 9	6·50	35 5
5·25	29 10	6·75	36 6
5·50	31 0	7·00	37 8
5·75	32 1		

Cost of Indian Corn, 8½ American bushels, calculated to net qr. 480 lbs., including freight 5*s.* per qr. and 5 per cent., duty 1*s.* per qr., one month's storage, insurance, all commissions and landing charges; exchange, 108:

Free on board. Per 56 lbs.	In Liverpool. Per quarter 480 lbs.	Free on board. Per 56 lbs.	In Liverpool. Per quarter 480 lbs.
	s. *d.*		*s.* *d.*
30 cents.	20 7	60 cents.	31 11
35	22 5	65	33 10
40	24 4	70	35 9
45	26 3	75	37 7
50	38 2	80	39 6
55	30 0		

Cost of Indian Corn Meal, including duty at 4½*d.* per cwt., freight 2*s.* 6*d.* per bbl., and 5 per cent., one month's storage, insurance, all commissions and landing charges; exchange, 108:

Free on board. Per barrel 196 lbs.	In Liverpool. Per barrel 196 lbs.	Free on board. Per barrel 196 lbs.	In Liverpool. Per barrel 196 lbs.
	s. *d.*		*s.* *d.*
$2·00	13 5	$3·25	18 11
2·25	14 6	3·50	26 1
2·50	15 8	3·75	81 2
2·75	16 9	4·00	22 3

It is here shown that at 26*s.* 6*d.* in Liverpool, a barrel of flour will yield but $4·50 in New York. It is now only 22*s.* 6*d.* and would yield little more than $3·50, but for the reduction of freight.

Ashes.—The quantity of ashes left by a ton of wheat straw is sometimes as much as three hundred and sixty pounds; by a ton of oat straw as much as two hundred pounds; while a ton of the grain of wheat leaves only about forty pounds.

CULTIVATION OF TOBACCO IN ENGLAND.

The question of the practicability of growing tobacco in England has lately been revived by the Duke of Richmond, who laid before the Royal Agricultural Society a pamphlet by a Mr. Little, who asserts, (on a most unsatisfactory experiment in Ireland,) that tobacco growing in England would be highly profitable, and ought, therefore, to be permitted in the present depressed state of agriculture.

The proposition, and all the alleged facts on which it is based, are very justly ridiculed by the Editor of "The London Agricultural Gazette," who says truly they might as well permit or pass laws to encourage the growth of coffee or cotton in England. The climate forbids it. There is no danger of England supplying herself with either corn or tobacco by home cultivation, or with cotton from her East India possessions. The Editor of "The London Agricultural Gazette" goes on to add what may have interest for American cultivators of tobacco, as follows:

"What the government should do, for the sake of revenue, as much as for the pecuniary advantage of the public, is, to reduce the duties on tobacco, so as to render smuggling a ruinous trade. That in one branch of the tobacco duties the frauds and smuggling are enormous, in consequence of an extravagant duty of 9*s.* 6*d.* per lb., is notorious. We allude to cigars; and as means exist of showing to what an extent the frauds in this article of trade must necessarily be, we take it for the sake of illustration.

"The quantity of foreign cigars which pay duty in this country may be taken to average from 25 to 28 millions annually.* But Cuba alone exported to Great Britain, in 1847, 26,760,000, according to the Parliamentary returns, and there must be an enormous additional quantity brought here from further sources. In 1843, the British West Indies exported to this country cigars to the value of 477*l.*; in 1842, some are reported among exports from the Mauritius, and we presume that small quantities, which we have not remarked, are mentioned as having been sent from other places.

"In the returns of exports from most cigar-making countries, no distinction is made between those sent to Great Britain and elsewhere, but it appears that the quantity exported from the following places was as follows:

"German Commercial Union	1842	604,898,200
Belgium	1844	45,101,500
France	1843	140,673,000
Manilla	1839	42,400,000
Venezuela	1847	167,692

In round numbers these countries alone export annually about 830 millions of cigars, reckoning only 100 to the lb., instead of 120, which is nearer the truth.

"But it would seem that Cuba alone sends here fully as many as pay duty, and that none can arrive from any other part of the world. Yet if we consider what a large quantity of Manilla cigars is publicly sold, and the probability that a great portion of the 700 or 800 millions exported from European countries is landed on our coast, no reasonable doubt can exist that the larger part of all the foreign cigars consumed in this country is smuggled. We have heard it estimated that not more than 1 lb. in 3 lbs. pays duty; and thus it must always be so long as the present customs' charge of 9*s.* 6*d.* per lb. is insisted upon. We suspect that the unmanufactured tobacco would give very similar results.

"If we are at all near the truth in these calculations, it is perfectly clear that the relief to be solicited from government, for the benefit of the middle and lower classes, consists not in permission to seek destruction by engaging in a ruinous and worthless cultivation, but in a large reduction of duties, which impoverish the exchequer, press heavily upon the consumer, and benefit nobody except the smuggler.

"We entirely agree with Earl Grey in the observations he made the other night, in the House of Lords, in reply to the Duke of Richmond:—'It had been complained,' said his lordship, 'that injustice was done to the farmer because he was not allowed to grow tobacco; but their lordships knew that the climate of this country was so unfavourable to the growth of that plant that, if foreign tobacco were admitted free of duty, there was not the remotest possibility that our growers could enter into competition with those of foreign

"* It is difficult to say what is the average number of foreign cigars in a pound. The ordinary sized run to about 120, regalias to about 75; intermediate sizes exist in trade; small cigars are not sold, we imagine, in sufficient numbers to be worth calculation.

countries. The present law was merely maintained to support the revenue, and to prevent an artificial trade from being bolstered up by the circumstance that a duty was levied upon foreign tobacco, while no duty was imposed upon English tobacco. If there were any possibility that persons in this country could grow tobacco upon equal terms with the foreign producer, he apprehended that there could be no objection to applying the same principle to tobacco which had been adopted with regard to beet-root sugar, which was allowed to be manufactured in this country on paying the same duty that would be charged upon it if it were manufactured in the colonies.' That is the only view of the question which a statesman can take; and we trust it will put an end to the idle schemes of men so ignorant of the connection between climate and vegetation as to be unable to understand why a tropical crop, demanding much labour, cannot be grown profitably in the North of Europe, where labour is necessarily dear."

But we must not flatter ourselves that any increase of consumption that would follow a reduction of foreign duties on our tobacco, would lead to any material and permanent increase of the price of tobacco. The fact is, that the region of soil and climate within which tobacco may be grown in our country, is immense. The whole West is filling up with labour which finds better remuneration in tobacco, even at $3 or $4 a hundred, than in grain or provisions, and transportation has been so much cheapened by the application of steam, and the construction of railroads and canals, to settle up the West and to enrich our large cities, that tobacco will never again be a very remunerating crop, any more than grain, in the old States on the sea-board.

After all, it is of great importance to have this staple admitted on reasonable terms in Europe, for although it might not essentially raise the price in this country, it would greatly increase both consumption there and production here, and so far divert labour from other over-done branches of agricultural industry. But instead of admitting our tobacco on reciprocal terms, with all their boast about free *trade*, the American planters receive less than 7,000,000 of dollars for their property on which the *duties* levied in Europe amount to $35,000,000, making this commodity yield to these governments in revenue five times as much as the article itself is worth to the producer.

SHEEP HUSBANDRY—SHIFTING ITS GROUND.

From what we see, this subject is gaining upon the public attention, at the same time that it is in a state of *transition* from the North and East to the South and West, which nothing but unthriftiness and want of forecast have prevented it from doing long since. The natural sheep-walks of our country—that is, of that which was our country—(until we have spread out to—the Lord only knows where!) lie south of the Delaware, along the slopes and mountain-sides of Western Pennsylvania, Maryland, Virginia, the Carolinas, Georgia, Kentucky, and Tennessee.

It is now admitted that to carry sheep through the year in Vermont, costs from $1·10 to $1·20, and, under conviction that it won't pay, dairy husbandry and cattle-raising are superseding sheep and wool.

The Vermonters think their beef of somewhat better quality than the Western beef.

Under all circumstances, it surprises us that any reading farmer within the regions designated, should forego the ample instruction to be derived from Randall's unequalled work on Sheep Husbandry.

How much Meat in a given quantity of Turnips?—The experience of one winter, some years ago, with a considerable flock of sheep folded over 30 acres of common and Swedish turnips, led to the inference that 1 lb. of meat is made during the consumption of every 150 lbs. of green food.

WHAT AMERICAN FARMERS ARE COMING TO.

[From a late English Paper.]

The Assessed Taxes.—There is nothing in this country so nearly amounting to personal slavery as these imposts. You cannot add a pantry to your house, you cannot open a loop-hole in your cellar, or put a light over your hall door; you cannot ride a mile on old Dobbin, the carrier's horse, you cannot rescue a lost dog from starvation and harbour him for twenty-four hours, you cannot employ an occasional waiter for one evening in the twelvemonth, you cannot write a letter to your grandmother and seal it with your grandfather's seal, you cannot take an old pony from the paddock and send a labourer on his back to summon the doctor, you cannot send your carriage to be repaired and use an old "trap" once or twice in its stead, you cannot employ a youth out of the village to help half a day in your garden, you cannot exceed so many inches of window, of wheel, or of pony; in fact, you can hardly do any thing without finding yourselves liable to an overcharge, a summons, and an appeal, and compelled either to put your name to what is literally a false and insufficient declaration, or pay duty for another dog, window, servant, horse, or carriage, as the case may happen to be.—*Times.*

We in the United States are on the high road to the same state of things, and as long as the cultivators of the soil allow themselves to be ridden by demagogues, of whatever faction, in their scrub-races for the "spoils" of power, so long will the expenses of our government go on increasing, from year to year. Places will be made for favourites and relations; and taxes be levied to pay them. Look already at the extension of our diplomatic agencies, and at the accumulated and accumulating power of the military! How many members of Congress are there who are altogether unconnected with some one who is himself, or has some near connection in the army or the navy? And, pray, reader, has an agricultural journal nothing to do with such questions? Are farmers not concerned about the *taxes?* Alas, good easy souls, many of them *do not know that they are paying any;* while the fact is, that millions of manufactures are let in at low duties, expressly to "raise revenue" to pay for useless diplomatic and military establishments, and pensions; the cost of these imported manufactures being all the while made up, almost entirely, of the foreign *agricultural produce* consumed in their preparation. With our great and growing population, and distance from other countries, our means of transporting militia to any menaced point—our West Point educated elves, to discipline, as General Jessup says they can do, "the whole militia of the United States in sixty days;" we have now only to administer our government in a spirit of justice and moderation, as shadowed forth by President Taylor, and there will be no danger of wars with foreign powers. What government would be mad enough to attempt to invade the United States at such tremendous cost as it must be done, and with such certainty of defeat? The very thought of it is absurd! Why, then, go on for ever keeping up armies at the expense of some $15,000,000 a year! In the next twenty years we shall have expended again—even in peace—another $500,000,000 at least, and for what? Ten times more than enough to complete all the projected lines of railroad connection, starting at various points, from Boston to Savannah, and leading across the Continent from the Atlantic to the Ohio and Mississippi. Ay, more than enough for the great road from the Mississippi to the Pacific; and yet we have not the power, forsooth, to put in even the one link that is wanting in Alabama to complete the great Atlantic steam connection from Maine to New Orleans! A British prime minister used to say, "*I love the farmers: they stand as quietly as their sheep to be shorn,*"—and is England the only country in which they bear to be fleeced so quietly? Thus, it is to be feared, they will continue to stand, until the skin is taken off next;

for it is ten to one but we lose the support of some subscriber, virtuously indignant that in what we here say we should so far *meddle in politics!* If farmers would not willingly submit to be shorn, let them follow the example of the "free traders" of England—let them, too, have recourse to *frequent meetings and constant agitation!*

If they would do that, they would get for the farmer that which everywhere puts the professional and the military man above him—they would get as *good* education at the public expense, for the plough, as *they* (the farmers and planters) now give to the sword. All our great military establishments would be turned—as the best system of defence for our country—into *schools* for teaching the principles of agricultural chemistry, geology, mechanical philosophy, civil engineering, land surveying, bridge and house building; and then their sons, too, would fill the high places of power, and direct the public policy for the public good. They would no longer "stand quietly like their sheep to be shorn." But how is it now? Why, for this honest expression of our thoughts, without caring a fig about what *party* they may please or offend, the probability is that we, who are standing, as it were, on a rolling-stone, to keep our chins above water, with much difficulty to do that, shall be left without even that precarious support; while, in England, those of the free traders who won't stand quietly to be shorn, but seek to shear the farmer, meet together, and agitate!—agitate!!—and having succeeded, club together and make up a snug little *purse* of **£70,000—$350,000**—for their advocate, Mr. Cobden!

Farmers, you had better pull off your party spectacles—look at things with your own natural eyes—say you won't stand quietly to be shorn any longer, but kick up and throw down party riders: go *for your own country*, and for the *landed interest*, on which all other interests live, as leeches live by sucking your blood. Take the foreign market as it comes—up to-day and down to-morrow—but first build up and depend on your *own market*, by offering encouragement and protection to those who will come near to your ploughs and your harrows, with their looms and their anvils, their shop-boards and benches, their hammers and their trowels, and spurn from your employment and confidence the representative in Congress who will vote one dollar for military, without first securing *at least an equal amount* (to begin with) *for civil instruction!*

Now tell us, reader, farmer or planter as you are, is there one sentiment advanced here, that will be echoed or justified by any of the party papers you take, and for which you so cheerfully pay, while so few will give even two bushels of wheat for the journal of a man who, for more than thirty years, has scarcely thought or dreamed of any thing but how he could advance your prosperity!

NEW AND CHEAP ROOFING.

THE lightest, cheapest, and most efficient roofing material is *Croggon's Patent Improved Asphalte Felt.* A house, 40 feet by 24 feet in the clear, may be erected complete, for 17*l.* 17*s.* 10*d.* Price of the Felt, one penny per square foot, in rolls 32 inches wide. Samples and details may be had by post. A large stock always on hand, to insure punctuality.—CROGGON and Co., 2 Ingram-court, Fenchurch-street, London.—*English Paper.*

We believe this to be the same material we have seen on sale at Mr. W. Gilmor's warehouse, in Gay street, Baltimore, and have been surprised not to learn more about the use of it, as it seems to us to be an exceedingly useful and convenient article. If any one has tried it, we should be glad to learn the particulars. Surely it must be cheaper and more portable and *come-at-able* than shingles.

THE FARMERS' NOTE-BOOK.

Not of *bank* notes, gentle reader—would that it were; but notes of all sorts of things that we see, or read, or hear of, on the wayside, that may be supposed to convey items of information either entertaining or useful to our patrons. If you knew how various are the pursuits and tastes of those who patronize "The Plough, the Loom, and the Anvil," you would at once perceive that a receptacle like this opens to us a sort of *omnium gather'em* in which "all sorts of paragraphs" may be stowed away. For instance, the last six subscribers on our list, up to the present writing, (June 1,) are—the secretary of a water company, a tailor, a merchant, a butcher, a livery-stable keeper, and a sadler—surviving partner of our old friends Jenkins and Lilly, Baltimore.

The truth is, that let men be following what business they may, there is an abiding proclivity, almost universal, to enter, some day, on what every man's fancy has pictured, at some time of his life, to him as the *happy life of an independent farmer!* Well do we remember, when, thirty years ago, we meditated the establishment of a paper expressly for the advocacy and enlightenment of the landed interest. We met at the ever-lively and joyous dinner-table of the late R. O., of Baltimore, a clergyman from the "Green Isle,"

> "——— as jolly an old soul
> As e'er crack'd a bottle or fathom'd a bowl."

Mentioning our design, and asking, from his ample store of classical recollections, a suitable motto, he promptly answered, "Och, sir, yes! you may give them from Virgil:

> "'Oh fortunatos sua si bona norint
> Agricolas—'"

And under that sign, accordingly, retained to this day, the old "American Farmer" made its first appearance, April 2, 1819. And well might the poet say, *if* they did but know it. With equal truth said Horace: "*Nemo cum sibi sortem contentus vivat*," &c. Nobody is content with his own lot: and of all the classes of mortal men, are not farmers the most incessant croakers? What with now too much rain, and next too little; and then the fly and the weevil—the striped bug, the rose bug, and the chinch bug—wire worm in the wheat, grub worm in the corn, horn worm in the tobacco, and the army worm in his cotton!—always apprehending short crops, and always getting low prices, one might think their troubles equalled only by the sufferings of Job himself; and yet take any number of cultivators of the soil, of sober and industrious habits, and sound discretion, and it is not to be denied that in the long run they will come out safer and sounder than a like number of any other class. They may at least be sure of that great and indispensable ingredient of happiness—exemption from debt—and for the rest, the older one grows, and the more he sees of what is passing around him, the more he becomes satisfied how little is the connection between happiness and riches. Let every farmer, then, who would study the happiness of his son, impress this truth upon his mind, and teach him that virtue and knowledge are the only objects fitted to stimulate the ambition and to adorn the character of man. "Wisdom," saith Solomon, "is the principal thing—therefore get wisdom." From this text, when a little school-boy, in Calvert County, we remember to have heard the venerable gray-headed Evan Thomas, of Montgomery County, pronounce a discourse in an old Quaker meeting-house, which stood solitary and alone in the woods,

on our paternal acres. "One comes into the world naked, and goes out naked. The difference in the fineness of a bit of linen for a shroud is not much. Man is a handful of clay which turns rapidly back again to dust, and which is compelled to relapse into the nothingness of sleep, to get strength against the morrow."

But to return to our subject: to whatever influence it is to be ascribed, yet so it is, that whether lawyer or doctor, or seaman or soldier, mechanic or merchant, there seems to be in the bosom of them all, a lurking propensity, perhaps unavowed even to themselves, when they shall have laid by enough from their earnings, to "buy a little farm," and settle down in the country, with wife and children around them, where they can quietly hoe their own cabbages, plant their own vines, gather their own figs, eat their own eggs, and churn their own butter, and sing the old song:

> "I'll eat my own lamb, my own chickens and ham,
> I'll shear my own fleece, and I'll wear it."

Be ye not surprised, therefore, gentlemen farmers, of whom so many among you, with all your broad acres, are too inert to read, or too penurious to subscribe for an agricultural paper, or any other except rank *party* papers —be ye not surprised when we tell you that no small part of the support for "The Plough, the Loom, and the Anvil" is drawn from lawyers and doctors, merchants and mechanics, who at present own not one foot of land, not even six by eight. But to all these we will endeavour to offer something in the way of requital—something that shall help them to realize their dreams of the happiness of rural life, and in the mean time, let the first lesson be to keep their children out of the streets—to lead them to the ***love of books***, and that "evil communication corrupts good manners." And now to

OUR NOTES.

GREEN WHEAT FOR SOILING.—Never did we see such a thing before to-day, (June 1.) Coming along Lexington street, Baltimore, saw a man carrying turns of green *wheat* into a back yard—followed him to see what it meant, when we had the pleasure to encounter Dr. Jamison, who told us that on a rich lot it would come in close succession to the rye crop used for same purpose; but that he was satisfied it was more valuable, containing decidedly more of saccharine matter, and being, as he had often remarked, ***greatly preferred by his cows***, to whose judgment he, in such case made and provided, was disposed to defer. He prefers it to clover, as less apt to inflate or ***blow up*** the cows, and in fact producing milk of a superior quality. We deemed it worth noting, as one great difficulty in carrying out a system of ***soiling*** seems to be in the procurement of an unbroken succession of suitable food.

INDIAN CORN FOR SOILING.—The late Timothy Pickering, who always ranked very high as a practical farmer, bestowed high praise on Indian corn, sowed broad-cast or drilled, for soiling. Nevertheless, a very respectable Committee of Essex County (Mass.) farmers—and there are none more inquisitive or exemplary—expressed strong doubts, as we see in their last "transactions," as to the reputed value of this plant, especially when used for the ***production of milk.*** The knowledge of its properties in ***all its parts***, and in ***all the stages of its growth***, to be ascertained by rigid analysis, is one of the wants of agriculture, which we doubt not, when he can get time to look around, will command the attention of the Secretary of the Interior. We hope to see a watchfulness over the demands of agriculture, so far as it lies within the functions of his office, distinguish, as we doubt not it will do, his administration of the Home Department—and to what public purpose,

so beneficent, can he devote his mind and the means at his command? His whole career and associations give assurance of his sympathy with all that concerns the cultivators of the soil. The editor of the "Boston Cultivator" says:

'An acre of good corn land, well dressed, will generally produce four or five tons of dry fodder, and four times that amount of green. As feed grows short the latter part of summer, particularly on dry lands, the farmer should provide some fodder for his cattle; and none is cheaper than that of Indian corn, as has been abundantly proved on the milk farms in this region, where the practice is almost universal.

"The famous Chinese Tree corn is an excellent variety for fodder, yielding a large crop, of excellent quality. Some farmers plant the sweet corn, as it yields fodder of a superior quality. The southern corn grows rank, and yields more than the northern; yet some prefer the northern kinds, as they produce fine fodder, and the cattle eat them more readily; yet the majority prefer the southern, on account of its productiveness. The Chinese yields nearly as well as the southern corn, and the fodder is better.

"Corn, for fodder, is often sown broadcast and harrowed in; but the crop will be larger if planted in drills, and dressed once by the use of the cultivator and hoe. By rather thick planting, a very large growth is prevented. Make the drills about three feet apart for large corn, and let the spears stand only two or three inches apart in the drill. It is often sown in broad drills, and allowed to stand so thick that there will be ten or twelve stalks to a foot in length."

COTSWOLD SHEEP.—The May number of "The English Farmers' Magazine" is embellished with superb engravings of the Polled Angus Bull, which obtained the Highland Agricultural Society's prize of $100, at the Society's meeting at Edinburgh, 1848, and also portraits of two Cotswold Rams, which took the first and second prizes at the Royal Agricultural Society's Show at York, England, in 1848. These last portraits are accompanied with the following brief but comprehensive notice of this breed of sheep, now sufficiently extended in the United States, to make it proper to be copied and diffused, as here it will be, all over the Union. Besides, doubtless, many others, these sheep are in the hands of Col. Ware of Virginia, and Mr. Sotham of Buffalo. Mr. Reybold, of Delaware, has perhaps a yet larger breed of the same character, called the New Oxfordshire. The following is the description in the English Magazine:

"This breed derives its name from the Cotswold wolds, a tract of calcareous hills in the eastern division of Gloucestershire, which are comparatively infertile, but yielding a short, sweet herbage in its natural state. It derives its name from *cote*, a sheep-fold, and *would*, a naked hill. The modern Cotswold sheep differ from those which inhabited these hills in former times. In 1629, Adam Speed thus describes the breed: 'On those famous hills, called Coteswold hills, sheep are fed that produce a singular good wool, which for fineness comes very near to that of Spain, for from it a thread may be drawn as fine as silk.' At the present day, the Cotswold sheep are of a size somewhat superior to the highest breed of Leicesters, and their wool is more close on their body. The staple measures from 6 to 8 inches, and the fleece weighs upon an average from 7 to 8 lbs.; in inferior flocks not exceeding 5 or 6 lbs. It is strong, of a good colour, rather coarse, but mellow. They have a tendency to produce fat on the rump, almost producing deformity; but their constitutions are good, and they are a hardy race. The females, too, are considered good nurses, and are prolific; and the lambs are early covered with a close fleece. They weigh, when from a year and a half to two years old, about from 20 to 30 lbs. the quarter. Their most recommendable qualities are their hardiness and property of thriving under common treatment, and the faculty of the females of producing numerous lambs, and supporting them well."

COLONIAL SYSTEM—ITS EFFECTS ON AGRICULTURE.

LORD SYDENHAM, in a letter to Lord John Russell, which accompanied his Report on Emigration to Upper Canada, observes: "Give me yeomen, with a few hundred pounds each, who will buy cleared farms, not throw themselves into the bush, and I will ensure them comforts and independence at the end of a couple of years—pigs, pork, flour, potatoes, horses to ride, cows to milk—*but you must eat all your produce, for devil a purchaser is to be found:* however, the man's wants are supplied, and those of his family; he has no rent or taxes to pay, and he ought to be satisfied."

The British Province of New Brunswick is becoming depopulated. Every vessel that comes thence is filled with men, women, and children, flying to seek refuge within the limits of our Union. So it is with Canada.

Maine, the next neighbour of New Brunswick, grows daily in wealth and population. So is it with New York and Michigan, the next neighbours of Upper Canada.

New Brunswick and Canada enjoy the blessings of free trade. In Maine, New York, and Michigan, there exists that protective system—the "war upon labour and capital" so eloquently described by the late Secretary.

From the former men are daily flying. *To* the latter they are daily coming.

To those who desire to understand the causes of these extraordinary occurrences, we would recommend a perusal of the above passage from Lord Sydenham's letter. The British Possessions are subject to the colonial system, which has for its object the separation of the plough and the loom, the necessary consequence of which is the exhaustion of the land and its owner, whereas the people of this Union are still, even under the tariff of 1846, to some degree protected against that system.

The natural place for the loom and the anvil is by the side of the plough and the harrow. The whole object of the colonial system is to increase the distance between them; and the protective system, as it exists in this country, is but the result of an instinctive consciousness on the part of the agriculturists of the Union of the advantage to be derived from bringing the consumer to take his place by the side of the producer.

The Editors of "The Union" politely denounce our doctrines as "absurd theories." We should be glad if they would explain why New Brunswick grows daily poorer under free trade, while Maine thrives under protection?

No reader of ordinary intelligence, need, we presume, be requested to note the immediate connection between questions like this and the condition and rights of the agriculturists of a country, especially in one like ours, where men exercising, or seeking to exercise, a controlling influence over its legislation, are perpetually extolling the benefits of what they call "free trade," and its influence in advancing *the cause of civilization!* It is to invite the farmer and planter to examine such questions, and to think for himself, instead of pinning his faith on the sleeve of *party demagogues*, that we have sought to ESTABLISH this work. For the advocates of free trade, such as is enjoyed by New Brunswick, to content themselves with denouncing our arguments as "absurdities," may be much more expedient than polite or satisfactory to impartial inquirers after truth—by whom alone, of *whatever party*, we have any ambition to be read.

A SUGGESTION FOR AGRICULTURAL CLUBS.

THE "New York Columbian Farmer" suggests what is, one might suppose, not only wise, but very practicable for all who have the self-command and resolution to *do any thing* for improvement in their line of business. It says:

Let each member of the club procure a good-sized blank book; commence, say in the spring; write down all matters which relate to the operations of the farm, viz.: number of acres, the soil, manner of tillage, quantity and kind of manure; the time of seeding of all kinds of grain and vegetables, quantity of seed per acre; the situation of the land, as to wet or dry; making suitable entries during the season, as to the weather, the growth of crops, whether doing well or not, and the probable cause; the time of harvesting, yield per acre; if good or poor, the probable cause; the time of selling, the price, if high or low. A memorandum somewhat similar, as to the stock; the disease with which they are attacked, if any, the remedy used, and the effect. Let an exact account be kept of the outgoes and incomes, and a balance be struck at the end of each year; taking special pains through the year to ascertain causes and their effects; and be not afraid of writing too much. By this course they would soon acquire the habit of putting their thoughts on paper in a systematic way. At the end of each year, these papers could be presented tc the club, and examined by a committee; and all matters worth remembering, put into a condensed report, and recorded. By this course, a comparison could be made between the different systems practised, and the best could be adopted. By this it is believed every important improvement would soon become general; errors would be detected and abandoned.

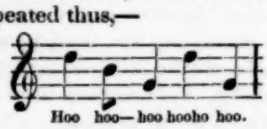
THE CUCKOO.

Perhaps few birds have excited more curiosity among naturalists than the cuckoo, and some rather contradictory accounts have from time to time been published respecting it. Dr. Jenner was the first who threw any light on the natural history of this extraordinary bird; and his account is interesting and satisfactory. The fact of the young cuckoo turning out its weaker companions, the natural inmates of the nest, is now undisputed. This operation is, I believe, generally performed on the second day after the birds are hatched,—at least, I have found it to be so in the cases which have come under my own observation. The young intruder seems to confine his attack upon his nestling companions to the act of discharging them from the nest. In one instance, which I had an opportunity of observing, the young birds, which had only been hatched two days, were so little hurt by a fall of four feet from the nest to the ground, that two of them contrived to crawl a distance of eight or nine feet from the place on which they had fallen. Sometimes the young cuckoo is hatched before the other birds; in which case he proceeds to discard the eggs, which he is enabled to do by means of a depression in the middle of his back. It seems, however, to have escaped the notice of those to whom we are most indebted for the information we already possess regarding the habits of the cuckoo, that the parent bird, in depositing her egg, will herself sometimes undertake the task of removing the eggs of those birds in whose nest she is pleased to place her own. I say sometimes, because I am aware that it is not always the case; and indeed I have only one fact to bring forward in support of the assertion; it is, however, connected with another relating to the cuckoo, not a little curious. The circumstances occurred at Arbury, in Warwickshire, the seat of Francis Newdigate, Esq., and was witnessed by several persons residing in his house. The following particulars were written down at the time by a lady, who bestowed much time in watching the young cuckoo:—"In the early part of the summer of 1828, a cuckoo, having previously turned out the eggs from a water-wagtail's nest, which was built in a small hole in a garden-wall at Arbury, deposited her own egg in their place. When the egg was hatched, the young intruder was fed by the water-wagtails, till he became too bulky for his confined and narrow quarters, and in a *fidgety* fit he fell to the ground. In this predicament he was found by the gardener, who picked him up, and put him into a wire-cage, which was placed on the top of a wall, not far from the place of his birth. Here it was expected that the wagtails would have followed their supposititious offspring with food, to support it in its imprisonment—a mode of proceeding which would have had nothing very uncommon to recommend it to notice. But the odd part of the story is, that the bird which hatched the cuckoo never came near it; but her place was supplied by a hedge-sparrow, who performed her part diligently and punctually, by bringing food at very short intervals from morning till evening, till its uncouth foster-child grew large, and became full-feathered, when it was suffered to escape, and was seen no more: gone, perhaps, to the country to which he migrates, to tell his kindred cuckoos (if he was as ungrateful as he was ugly when I saw him in the nest) what fools hedge-sparrows and water-wagtails are in England. It may possibly be suggested, that a mistake has been made with regard to the sort of bird which hatched the cuckoo, and that the same bird which fed it, namely, the hedge-sparrow, hatched the egg. If this had been the case, there would have been nothing extraordinary in the circumstance; but the wagtail was too often seen on her nest, both before the egg was hatched, and afterwards, feeding the young bird, to leave room for any skepticism on that point; and the sparrow was seen feeding it in the cage afterwards by many members of the family daily."

Spurzheim asserts in his lectures, that he actually saw an instance of a cuckoo having dropped her egg near a nest so placed that she herself could not possibly gain admittance to it: and that after removing the eggs which were already in the nest, she took up her own egg in one of her feet, and in that way placed it in it.

A gentleman in Sussex fired at a bird sitting on a fir tree in his garden, which he took for a hawk, and it fell with a broken wing. On picking it up, it proved to be a cuckoo, and being in beautiful plumage, and very lively, he tied up the wing, and sent it to a friend at Chichester, who, captivated by the bird's quiet demeanour, determined to undertake its cure. On being put into a cage, the bird soon fed, and appeared perfectly reconciled to its loss of freedom. It ate fresh meat of any sort, cut small and mixed with bread scalded and broken, and a raw egg. On this diet the bird did well for three months. At this time a lad brought some yellow-hammer's eggs, intending them as a treat, one of which the bird unexpect-

edly seized, and attempted to swallow. It stuck, however, in its throat, and killed it in a short time. This would seem to prove that these birds feed sometimes on eggs. A cuckoo was kept at Goodwood-house for nearly two years: but the persons who had the care of it never heard its natural note of "Cuckoo." It is not unfrequent, soon after the arrival of these birds, to see four or five or more of them in animated sportiveness on the branches of an oak. If the spectator is attentive, he will soon hear the notes repeated thus,—



which, probably, are notes of exultation from the favoured suitor. When a cuckoo is flying in a straight line, it will often give utterance to a beautiful sound, more like a delicate and lengthened shake on the flute than any thing else it can be compared to. As the bird is always alone when this note is heard, we may conclude that it is a call for its mate.

The cuckoo is sometimes mobbed by the wagtail, and some of the other fly-catcher tribe, not because he feeds upon them, but because he invades their retreats. I have often watched the cuckoo, but never yet saw it in the act of procuring its food; a circumstance which almost makes me think that it feeds late at night only, or very early in the morning, when moths are most abundant. That it is insectivorous there can be no doubt, though some naturalists have thought otherwise. The very circumstance of its depositing its egg in the nest only of those birds who feed their young with insects, is a strong proof of this. There is still a great mystery attached to the natural history of the cuckoo, and one would willingly, if possible, rescue it from the charge of a want of that natural affection which has been alleged against it. It has been stated that what has been said by a very ancient and sublime writer, concerning the defect of natural affection in the ostrich, may be applied to the cuckoo. It is now, however, pretty well ascertained that the ostrich only quits her eggs when the sun is so powerful that the additional warmth from her body would be detrimental to them. She, therefore, returns to them in the cool of the evening. I am persuaded that the more we inquire and search into the economy of nature, so far from finding any defects, we shall have more and more reason to be convinced that not only every bird, but every animal from the highest to the lowest in the scale of creation, is equally well adapted for the purpose for which it was intended. The chief object of a naturalist should be always to "look through nature up to nature's God;" and if we do so with a sincere desire to be benefited by the survey, we shall have fresh cause for wonder and admiration, and find our minds more disposed to receive the good impressions which such a study must produce.

The cuckoo probably lays more than one egg, as I believe there are not many instances of any species of bird laying only one. Nature is too provident in the preservation of the different species to run any risks of their being exterminated, which might be the case if only one egg were deposited. Colonel Montagu dissected a cuckoo, which had in her four or five eggs. Mr. Rennie thinks it lays a second time. Blumenbach says she lays six eggs in the spring from *time to time*. The cuckoo probably has the power of retarding its egg till it can find a proper nest to deposit it in. The egg, though larger than the egg of those birds in whose nest it is placed, does not stand in need of a longer period of incubation. I have often tried to account for the intrusion of the cuckoo into the nests of other birds. Its peculiar formation is not a sufficient reason. It is however the largest of insectivorous birds, with the exception of the honey buzzard, and naturally requires a great quantity of food. Like the swallow, therefore, one would think it would be constantly feeding. If the hen, however, sat on her own eggs, how could this large supply of food be obtained? While she was in search of it, her eggs would be spoiled. Mr. White observes that cuckoos cannot be birds of prey, as they have a weak bill and no talons.

THE FOX.

"Hark! what loud shouts
Re-echo through the groves! he breaks away:
Shrill horns proclaim his flight."—SOMERVILLE.

SOME curious instances are related of the cunning evinced by foxes, not only in the preservation of their lives, but in procuring themselves food. A fox, which had been frequently hunted in Leicestershire, was always lost at a particular place, where the hounds could never recover the scent. This circumstance having excited curiosity, it was at last discovered that he jumped upon, and ran along a clipped hedge, at the end of which was an old pollard oak-tree, hollow in the middle. He crept into this hollow, and lay concealed till the alarm was

over. His retreat, however, being discovered, he was driven from it and killed. Another fox selected a magpie's nest as a place of retreat, and was discovered in consequence of a labouring man having observed a quantity of bones, feathers of birds, &c., on the ground under the nest. The following fact may be relied upon, extraordinary as it may appear. I received it from a gentleman of the strictest veracity, and who communicated it to me very recently, on his return from the South of France. A friend of his, with whom he passed much of his time there, was in the habit of shooting in a part of the country where there was much wild and rocky ground. Part of this rocky ground was on the side of a very high hill, which was not accessible for a sportsman, and from which both hares and foxes took their way in the evening to the plain below. There were two channels or gullies made by the rains, leading from the rocks to the lower ground. Near one of these channels, the sportsman in question, and his attendant, stationed themselves one evening in hopes of being able to shoot some hares. They had not been there long, when they observed a fox coming down the gully, and followed by another. After playing together for a little time, one of the foxes concealed himself under a large stone or rock, which was at the bottom of the channel, and the other returned to the rocks. He soon, however, came back chasing a hare before him. As the hare was passing the stone where the first fox had concealed himself, he tried to seize her by a sudden spring, but missed his aim. The chasing fox then came up, and finding that his expected prey had escaped, through the want of skill in his associate, he fell upon him, and they both fought with so much animosity, that the parties who had been watching their proceedings came up and destroyed them both.

Pontoppidan informs us, that when a fox observes an otter go into the water to fish, he will frequently hide himself behind a stone; and when the otter comes to shore with his prey, will make such a spring upon him, that the affrighted animal runs off, and leaves his booty behind. Mr. Bingley quotes this anecdote, but without giving much credit to it.

In Smith's Directory for destroying vermin, we find it said that the fox exhibits a great degree of cunning in digging young rabbits out of their burrows. He does not try to enter the hole; for in this case he would not only have to enlarge it, but have also to dig several feet along the ground, under the surface of the earth; but he follows their scent above, till he comes to the end, where they lie; and then scratching up the earth, descends immediately upon them, and devours them.

Buffon considered that the fox ought to be placed among the higher order of quadrupeds, from the great care and dexterity they show in the construction of their habitations. Some of them are placed in extraordinary situations, a fox having been known to let himself drop from the edge of a precipice on a projecting piece of rock just below it, from which he got into his hole or den. These dens are sometimes provided with outlets, by which the fox may effect his escape.

Buffon says that foxes are so fond of honey, that they will sometimes attack bee-hives, and even the nests of wasps, and that they frequently meet with so rough a reception as to be obliged to roll themselves on the ground, to get rid of the insects that are stinging them. They then return to the charge, and generally succeed in securing the combs. I have, however, kept bees where there were many foxes in the neighbourhood, who could have gained access to my hives without any difficulty, and I never had reason to suspect that they in any way molested them, nor did I ever hear of an instance of this having happened in this country.

MANUAL OF MANNERS.

OCCUPATION OF TIME.

The proper use of time is so essential to human happiness, that it is only surprising how it can ever be neglected. It is with time, however, as it is with health, generally abused, and too often sacrificed, through our own imprudence and folly. However numerous our avocations are, time, if properly cultivated, will afford leisure for them all; regularity and punctuality being sufficient to prevent our being hurried in any.

Economy as relates to time forms as important a subject for study as it does in money matters. Time is the most valuable estate which any one can possess; and, if skilfully put to use, will yield returns a hundred and a thousand fold. The disposal of your time ought, therefore, to be your first object; and when this is carefully arranged, all your pursuits and engagements will go on as naturally and as smoothly as if impelled by machinery.

The Chancellor d'Aguesseau, who died in 1751, was one of those persons who know

the value of time, and neglect no opportunity of improving it. Madame de Genlis relates of him the following anecdote:—"Observing that Madame d'Aguesseau always delayed ten or twelve minutes before she came down to dinner, he composed a work entirely in this time, in order not to lose an instant: the result was, at the end of fifteen years, a book in three large volumes quarto, which has gone through several editions, and is much esteemed." Madame de Genlis does not mention the title of the work, but the anecdote is an interesting one.

It is strange that there should be such a strong inclination on the part of men and women—reasonable and responsible beings as they are—to idle away their time in frivolous employments, and disregard the warning which every hour, as it flies past for ever, affords them. The great desire with many is to "kill time;" forgetting, alas, that in dissipating away, vainly and fruitlessly, the precious days and seasons allotted to us, we are only taking from ourselves "the means by which we live," and throwing among the irrecoverable treasures of the past, the hours we received to bless and enliven the present, and render pleasing and useful the future!

Time is the thoroughfare through which we pass to eternity; and every Christian moralist, in writing upon the subject, must endeavour to impress this great truth upon the minds of his readers. How assiduous, therefore, must we all be so to occupy our time as not to be found among those who, in destroying it, have destroyed also their own hopes of eternal happiness! Every passing-bell that tolls reminds us of another pilgrim having been called home; every funeral pageant that we pass tells us of another sinner gone to his account.

Every person who has a due regard to his own comfort and moral and social advancement should consider how, in the proper occupation of his time, he can best dispose of it to advantage, apportioning his hours without losing any, and arranging his occupations without allowing the one to interfere with the other;—giving so much time to devotion, so much to business, so much to study, so much to reading, so much to recreation, so much to seeing friends, so much to the other duties of life, and so much to sleep! The latter ought, on no account, to be prolonged.

Industry is a great help to genius. This truth knew Sir William Jones, who, by never losing a minute that he could turn to useful account, acquired more languages than almost any other man living. Of Sir Edward Coke's distich on time he had a high idea—

"Six hours in sleep, to law's grave study six,
Four spend in prayer—the rest on Nature fix:"

which he altered to the better:

"Six hours to law, to soothing slumber seven,—
Ten to the world allot, and *all* to Heaven."

The late Jeremy Bentham, it is recorded, was a great economist of time. He knew the value of minutes. The disposal of his hours, both of labour and of repose, was with him a matter of systematic arrangement.

An hour in the morning may be said to be worth two in the day. The senses are then refreshed, the understanding unclouded, and the imagination active. Many of our best writers have chosen the morning as the time for composition. As regards reading, no other period of the day is more appropriate, or, usually, more unoccupied.

BUSINESS CORRESPONDENCE.

Even in matters of business, politeness should not be altogether overlooked, nor courtesy disregarded. The tradesman who writes his orders in a peremptory tone, or issues his commands in a haughty and insulting manner, will be treated with contemptuous neglect; while he, whose conduct proves that the gentleman is not necessarily merged in the merchant or shopkeeper, will be sure to have his wishes studied, and his orders obeyed, with a degree of attention and respect which is denied to the discontented and uncivil person, who is despised for his pride and arrogance. Instances of this occur in every one's experience, and we need not dwell upon it here, as one's own good sense and practical knowledge of the usages of the world ought to teach him how to conduct himself to his correspondents.

Courtesy never loses any thing; but, on the contrary, is always a gainer; and it ought to be introduced in business as a profitable part of the means of trade, if it does not exist naturally in the manners: that is, if a man's good feeling does not prompt him to be polite, his self-interest ought to make him so.

We need not add, what is so well known to every real man of business, that correspondence ought to be systematically conducted—every letter promptly and punctually answered—and every order, as soon as possible, completed and despatched. Method and punctuality are the mainsprings of business; and the correspondence of a person engaged in trade ought to be conducted with the same regularity and attention that he bestows on his books or his accounts; for on this, as much as on any thing else, in a great measure, depends the secret of a successful business.